

HUGH A. SHAMBERGER: MEMOIRS OF A NEVADA ENGINEER AND CONSERVATIONIST

Interviewee: Hugh A. Shamberger

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Description

Hugh A. Shamberger was born in Idaho in 1900. He attended schools in the Payette region and graduated from Stanford University with an engineering degree. He worked at surveying and engineering jobs in California, and when Hoover Dam was in the planning stages, he decided to make a home in Nevada. Arriving in Las Vegas early in 1929, Shamberger began a new phase of his career, working at mining and engineering in the developing community.

One of Shamberger's new friends in Las Vegas was Alfred Merritt Smith, who became the state engineer of Nevada. Under Smith's sponsorship, Shamberger also entered the state service, first in the State Highway Department, and then in the office of the state engineer. While in this office Shamberger pioneered several techniques of studying the water resources of his adopted state, and wrote of his researches in several monographs that are widely used. As state engineer, he was instrumental in aiding Nevada's cause in the Colorado River litigation, *Arizona v. California*, in the 1950s.

As the duties of the state engineer's office became more complex, Shamberger designed and pressed to completion a reordering of several state offices concerned with state resources, and the Nevada Department of Conservation and Natural Resources was created. This office contained the office of the state engineer, the Division of Water Resources, the Division of Forestry, the Division of Oil and Gas, and the Division of State Land. Hugh Shamberger became the first director of the new office.

He was the head of the state's Civilian Defense organization during World War II, and he served two terms as a county commissioner of Ormsby County (Carson City). During his term as county commissioner, Shamberger organized, and became the first president of, the State Association of County Commissioners.

After his retirement, Shamberger became director of the Center for Water Resources Research, a division of the Desert Research Institute at the University of Nevada. Under his leadership, it has become nationally known and respected for pioneering studies of water problems.

The memoir includes reminiscences of early days in Idaho and California, an account of Shamberger's work in the Las Vegas Valley in the early 1930s, a discussion of water and land problems in Nevada, impressions of the Colorado River adjudication, information about the Department of Conservation and Natural Resources, and discussions of political and civic affairs.

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WE ACKNOWLEDGE WITH THANKS THE ASSISTANCE OF THE UNIVERSITY OF NEVADA
COLLEGE OF ENGINEERING IN PREPARATION OF THIS MEMOIR.

An Oral History Conducted by Mary Ellen Glass

University of Nevada Oral History Program

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PREFACE TO THE DIGITAL EDITION

Established in 1964, the University of Nevada Oral History Program (UNOHP) explores the remembered past through rigorous oral history interviewing, creating a record for present and future researchers. The program's collection of primary source oral histories is an important body of information about significant events, people, places, and activities in twentieth and twenty-first century Nevada and the West.

The UNOHP wishes to make the information in its oral histories accessible to a broad range of patrons. To achieve this goal, its transcripts must speak with an intelligible voice. However, no type font contains symbols for physical gestures and vocal modulations which are integral parts of verbal communication. When human speech is represented in print, stripped of these signals, the result can be a morass of seemingly tangled syntax and incomplete sentences—totally verbatim transcripts sometimes verge on incoherence. Therefore, this transcript has been lightly edited.

While taking great pains not to alter meaning in any way, the editor may have removed false starts, redundancies, and the “uhs,” “ahs,” and other noises with which speech is often liberally sprinkled; compressed some passages which, in unaltered form, misrepresent the chronicler's meaning; and relocated some material to place information in its intended context. Laughter is represented with [laughter] at the end of a sentence in which it occurs, and ellipses are used to indicate that a statement has been interrupted or is incomplete...or that there is a pause for dramatic effect.

As with all of our oral histories, while we can vouch for the authenticity of the interviews in the UNOHP collection, we advise readers to keep in mind that these are remembered pasts, and we do not claim that the recollections are entirely free of error. We can state, however, that the transcripts accurately reflect the oral history recordings on which they were based. Accordingly, each transcript should be approached with the

same prudence that the intelligent reader exercises when consulting government records, newspaper accounts, diaries, and other sources of historical information. All statements made here constitute the remembrance or opinions of the individuals who were interviewed, and not the opinions of the UNOHP.

In order to standardize the design of all UNOHP transcripts for the online database, most have been reformatted, a process that was completed in 2012. This document may therefore differ in appearance and pagination from earlier printed versions. Rather than compile entirely new indexes for each volume, the UNOHP has made each transcript fully searchable electronically. If a previous version of this volume existed, its original index has been appended to this document for reference only. A link to the entire catalog can be found online at <http://oralhistory.unr.edu/>.

For more information on the UNOHP or any of its publications, please contact the University of Nevada Oral History Program at Mail Stop 0324, University of Nevada, Reno, NV, 89557-0324 or by calling 775/784-6932.

Alicia Barber
Director, UNOHP
July 2012

INTRODUCTION

Hugh A. Shamberger is a native of Idaho, where he was born in 1900. He attended schools in the Payette region, and trained at Stanford University for a career as an engineer. He worked at surveying and engineering jobs in California following his graduation from Stanford, and when Hoover Dam was in the planning stages, decided to make a home in Nevada. Arriving in Las Vegas early in 1929, Shamberger began a new phase of his career, working at mining and engineering in the developing community.

One of Hugh Shamberger's new friends in Las Vegas was Alfred Merritt Smith, who became the State Engineer of Nevada. Under Smith's sponsorship, Shamberger also entered the state service, first in the Highway Department, and then in the office of the State Engineer. While in this office, Shamberger pioneered several techniques of studying the water resources of his adopted state, and wrote of his researches in several monographs that are widely used. As State Engineer, he was instrumental in aiding Nevada's cause

in the Colorado River litigation, Arizona vs. California, in the 1950's.

All the duties of the State Engineer's office became more complex, it became apparent to him that a reorganization was required. Shamberger then designed and pressed to completion a reordering of several state offices concerned with state resources, and the Nevada Department of Conservation and Natural Resources was created. This office contained the office of the State Engineer, the Division of Water Resources, the Division of Forestry, the Division of Oil and Gas, and the Division of State Land. Hugh Shamberger became the first Director of the new office.

Throughout the years that Hugh Shamberger was in the State Engineer's office, and then Director of the Department of Conservation and Natural Resources, he accomplished several other worthwhile objectives, and engaged in a number of interesting projects. He was the head of the state's Civilian Defense organization during World War II, he served two terms as County

Commissioner of Ormsby County (Carson City), and engaged in other civic enterprises. During his term as County Commissioner, Shamberger organized, and became the first president of the State Association of County Commissioners.

Upon his retirement from state service, Hugh Shamberger continued to work in the field of water conservation for his arid state, becoming Director of the Center for Water Resources Research, a division of the Desert Research Institute at the University of Nevada. Under his leadership, this Center has become nationally known and respected for pioneering studies of water problems.

When invited to participate in the Oral History Project of the Center for Western North American Studies, Mr. Shamberger accepted readily. There were eleven taping sessions between December 23, 1965 and March 30, 1966, all at the office of the Center for Western North American Studies. Speaking from notes or extemporaneously, Mr. Shamberger was a cooperative and gracious interviewee, answering all questions, and appearing to enjoy his experience.

The memoir recorded by Hugh Shamberger includes his reminiscence of early days in Idaho and California, an account of his work in the Las Vegas Valley in the early 1930's, a discussion of the water and land problems encountered by the State Engineer, his impressions of the Colorado River adjudication, the story of the organization of the Department of Conservation and Natural Resources, discussions of political and civic affairs, and a summary and conclusion.

The Oral History Project of the Center for Western North American Studies attempts to preserve the past and the present for future research by tape recording the life histories of persons who have played important roles in the development of Nevada and the

West. Scripts resulting from the interviews are deposited in the Nevada and the West Collection of the University of Nevada Library. Permission to cite or quote from Hugh Shamberger's oral history may be obtained from the Center for Western North American Studies.

Mary Ellen Glass
University of Nevada
1967

MY EARLY LIFE AND CAREER

I presume in starting this autobiography, that I should start with some of the early family history. On my father's side my great-great grandfather, Nicholas Shamberger, came from Germany at the age of twenty. His home was in Hesse-Kassel, Germany. I have been told by my uncle and aunt that at one time the name was Von Shamberg and that the family was quite rich, owning several castles on the Rhine. My great-great grandfather settled in eastern Pennsylvania after he arrived in the United States in 1784. When he left Germany, it was during the reign of Frederick The Great, who was an absolutist ruler. I have heard my uncle and aunt say that if you didn't agree with the powers you either got out or put in jail. During that period there was a great migration out of Germany, and my great-great grandfather came to the United States.

My great-great grandparents had seven children; one of these, Jacob, was my great-grandfather. He also lived in eastern Pennsylvania and served in the War of 1812. He had seven children, and his fourth son, Jacob, was my grandfather.

At an early age, my grandfather moved to Parkton, Maryland, about thirty miles outside of Baltimore. There they built a beautiful home. It was in rolling hills and the ranch contained several hundred acres. That is where my father and all his brothers and sisters were born.

I can remember my Uncle John saying that from their home there near Parkton, Maryland which is just a railroad stop, they could hear the guns of Gettysburg during the Civil War.

A number of years ago, the city of Baltimore purchased my ancestral home for the Pretty Boy Reservoir which furnishes Baltimore with domestic water.

Sometime during the late 1880's or the early 1890's, my father and Uncle John started west, and after a couple of years ended up in Butte, Montana. I have heard them talk of their trip into Butte. They had heard that Butte was a wild place, with a lot of shooting and so forth, so before they got there they each purchased a six-shooter and plenty of ammunition.

When they got to Butte, they looked around and didn't see anybody wearing any guns. They were rather ashamed of having these guns strapped on so they bought baskets, and put the guns and ammunition in the baskets. They never needed the guns in all the time they were in Butte.

My father became a mill superintendent at the Butte mines, and his brother John worked in the mines. Shortly after they arrived in Butte, their sister, Susie (my Aunt Susie), came west and joined them. Aunt Susie—we called her “Deedee”—and Uncle John, whom we called “Unkie,” lived with us all their lives. Neither one of them ever married.

It was in Butte, Montana, that my father and mother married. My oldest brother Philip was born there. My mother was a Canadian, and her name was Maud Mary McMillan. Her mother was of Scotch descent and was of the McLeod clan. Mother was born in Glendary County, Ontario Province. Her father was a mill architect and a builder of gold and silver mills. He designed and built some of the large mills in Butte. Also, he made seven trips to southern Africa in the Johannesburg region, where he built mills. Mother had three brothers and three sisters.

In about 1898, my father, mother, Uncle John and Aunt Susie moved to Coeur d'Alenes in Idaho, which is up in the panhandle. My father became the mill superintendent of the Silver King mine that was located between Kellogg, Wardner, and Wallace. Silver King was in the center of the gold, silver, and lead mining area in the Coeur d'Alenes. There, my folks lived in a log cabin. It was in this log cabin that my twin brother Ralph and myself were born, February 20, 1900.

I can remember hearing them talk about the fact that it was a heavy winter and the snow was several feet deep when we were born. They had to tunnel into the cabin to

get in. My sister Ruth was also born in this log cabin in 1901.

I have little recollection of this area as a child, because we moved further south in Idaho to Payette in 1904. I do remember the timbered mountains, and on one occasion when I was out with my two brothers in the woods we ran across a big black bear almost in our back yard.

In about 1903, my father contracted what was known as miner's consumption. He was told he would have to leave the mines. That year, Uncle John went further south in Idaho looking for a place to settle. They purchased 320 acres in Washoe Valley between Payette and the Snake River. The Snake River was about one-half a mile from the ranch and across the Snake River was the Oregon town of Ontario. In 1904, we all moved down to the farm. It was on this farm that my brother Dan was born in 1904, my sister Beth in 1906, and my brother Billy in 1908.

It seems rather peculiar that I was raised in Washoe Valley in Idaho, and now live in Washoe Valley in Nevada. I think the Washoe Valley in Idaho was named after the Washoe Valley here in Nevada, located between Reno and Carson City.

I have heard some of the old timers around Payette talk about the fact that there were very few people in that whole area up until the 1880's. Moving bands of Indians went throughout the country, usually doing nothing more than stealing, but once in awhile getting out of hand and killing someone.

Our ranch was a beautiful place in those days. We had a pond which was about the size of a football field; in the summer we swam in it, and in the winter we skated on it. Through the farm ran some large sloughs. There was a big grove of cottonwood trees beyond one of the sloughs and not too far from the house. Here most of the church picnics were held and

some other occasions, like the Fourth of July celebration. My uncle and father were good farmers and they kept the ditch banks cleaned and the pond cleaned. It was a picture place.

When I started to school there was an old two room schoolhouse located beyond the Union Pacific Railroad about one-quarter to one-half a mile from our house. One room took up to the fourth grade and the other to the eighth grade.

I have some vivid recollections of the school, especially when I got into the upper grade room because of some of the school teachers we had. Some of the pupils in the seventh and eighth grade were twenty-one and twenty-four years old. They took affront whenever the teacher tried to tell them to do something. I don't know how many teachers had to quit during the school term because of getting beat up. I recall one teacher that came prepared with a rubber hose, solid, that he would coil up in his pocket; it had a big spike for a handle in it. Then he would call some of the students who were not behaving up in the front of the room and pull out that big whip and let them have it. On only one occasion did I ever get to feel that whip, and that was enough.

I presume the two-room schoolhouse in Washoe Valley was similar to all such schoolhouses. We had a big stove in the corner that burned coal. All of the students were in two rooms. The teacher would take one class at a time.

One of the things I remember about it was the spelling bees. I was probably the worst speller in the state of Idaho at that time. They would line up in a room, and I always managed to be at the foot of the class, or one up. One occasion I recall, the teacher started at the head of the class with a word and none of them could spell. Finally, they came down to me and I accidentally spelled it right. I

think that was one of the proudest moments of my life. In fact, everybody clapped when I walked up to the head of the class. The next time around, I was back in my usual place.

The teacher in the room for the first four grades was practically always a lady teacher. She had no difficulty. When they got to the other room, that was when the trouble started.

As I mentioned earlier, some of the pupils were quite old; even the girls. The teachers in the upper grades were men, and they had to be able to protect themselves against getting worked over by the larger boys, and meeting some of the crises involved when they would bring snakes into the room, and some other things to cause excitement.

Later on, when I was about in the seventh grade, they built a community building next to the schoolhouse and the teachers, usually a man and his wife, lived in this community house. In this building, they had the neighborhood meetings and so forth. They taught spelling, reading, arithmetic, and geography. In the higher classes, they taught history and that was about it. They taught only the fundamentals, but at that time I presume it was sufficient because most of the pupils went on to high school, but very few went on to college.

They always had a little graduation exercise where the children would sing a song, some would read poetry, and sometimes they would develop a little play.

The three major days of the year when we were young were the Fourth of July, Hallowe'en and Christmas. On the Fourth of July, they always had a big celebration, either at the grove up at the mill pond or at our grove at home. The kids would play games and we would have an orator from someplace or other who would give an oration on some subject commensurate with the day. Hallowe'en was a great day because we went around the

neighborhood and did all the mischief we could, sometimes getting caught, but most always managing to escape.

Christmas was a day we looked forward to probably most. In those days, presents were very meager. We didn't expect much, but what we did get, we enjoyed.

My boyhood in Washoe Valley was very pleasant. In those days, there were no automobiles and we had to make our own fun. Usually it consisted of swimming in the summertime, and playing horseshoes or other types of games. About Thanksgiving, we could expect to start our skating. We had our pond, the sloughs and the big mill pond, and we were usually able to skate up to about the middle of February. Everyone in that area had sleds; big family sleds which could be drawn by a couple of horses and would hold the whole family. About December first, we could all expect to use that sled when we went to town for the usual Saturday marketing.

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I recall that in about 1908 or 1909, I had my first automobile ride. This was in an old Buick. The next trip, I believe, was in a Stanley Steamer. We didn't get a car until about 1917, and that was a second-hand Ford Model T. My mother never did learn to drive a car, and everytime she went to town—even as late as 1923, or 1924—she would have one of the boys hook up the horse and buggy and off she would go.

My father passed away in 1910, so I had Mother, Unkie and Deedee and my six brothers and sisters. (Speaking of my brothers and sisters, I am happy to say that they are all alive and in good health.)

Another recollection I will never forget is of seeing Walter Johnson, probably the greatest baseball pitcher in the history of the game. He pitched there in Payette in about 1909, or 1910. He started pitching baseball for the Weiser team. Weiser was a town located about twelve miles further down the Snake River. On this occasion, they were playing the Fayette team. Walter fanned out almost every batter he faced practically; I know there were no hits, and he fanned out at least twenty of them.

Baseball was a great sport in those days. The teams along the Snake River were quite

good, and there was bitter rivalry. They had Weiser, Payette, Caldwell, and Nampa in Idaho, and Ontario, and Nyssa in Oregon in the league. There was seldom a game played which didn't end up in a big fist-fight. The teams would bring in three or four paid, pro or semi-pro pitchers. Then during the later part of their season, when some of the big leagues had finished their schedule the players would come around and make one or two hundred dollars a game playing for one of the Snake River teams.

All of my brothers and sisters went through the old country school there in Washoe Valley, and then to high school in Payette. Payette was about two miles away, and we always walked. We would walk along the railroad track, cross the railroad bridge. During that four years I was never late, never tardy, or never absent from high school. Somewhere along the line I think about the seventh grade, my twin brother either jumped a grade or I was held back—I think he jumped a grade—because he was a year ahead of me in high school and all through college.

During our high school days, I was quite active in sports, mainly in football and baseball. My football experience was not good because I never finished a season, always ending up with a broken bone someplace. In those days, on the high school fields there was no grass, just plain hard-packed soil. When you hit, you really felt it. Our football uniforms didn't have too much padding.

I always liked baseball, and played on the high school team and also on the college team at Stanford. On trips to the other teams, we would visit Caldwell, Ontario, Fruitland. Many times we would get thirty miles away from home and we thought it was really something. We usually went by train, never by automobile.

In 1915, my oldest brother Philip left for Stanford, my twin brother Ralph entered

Stanford in 1917, and I entered Stanford in 1918, and graduated in 1922. I was never as good in the classroom as either my twin or my older brother. I was pretty good in mathematics and managed to get by.

During the summertimes on the farm we always had cows to milk, we helped hay, put up the grain, dig the potatoes. As I got older, sometimes we would work in the orchards picking fruit or picking raspberries. On a couple of summers, we worked the Union Pacific Railroad in helping to ice the fruit cars.

The Union Pacific icehouse was located a quarter of a mile from home. Every winter, they filled this large building with ice. Then in the summertime, the railroad would bring in the fruit cars, load them up with ice, and then take the fruit to the eastern markets.

Sometimes in the summer, we would take a vacation and go to the mountains. This would mean fixing up the old wagon with the schooner top, hooking up about four horses, and starting off. It would take us about three days by wagon to get to the mountains where we would have our camp.

Following my graduation from high school I decided I wanted to work for the Forest Service. The regional office of the Weiser National Forest was in Weiser, Idaho. I managed to get a job as a forest guard in the Weiser National Forest, right close to the Seven Devil country and about 120 miles from home.

I bought a horse for about thirty dollars, and an old saddle, and started out for my post at Council, Idaho, and the Cuddy Mountain ranger station. I had sent some of my clothes by the narrow-gauge railroad that ran through to Council. It took me about three days to get to Council, and then another half day to the Cuddy Mountain ranger station.

I recall that when I got there, I was told to go out and meet a crew up on top of Cuddy

Mountain, where they were making trail. During the wintertime a number of trees had fallen across the trail and it had to be cleared. They had a crew of men working on this. When I arrived at the camp late one evening, I was told that each newcomer was supposed to cook the breakfast. Not having ever cooked in my life, and being too bashful to tell them I had never cooked, I attempted to cook breakfast. Needless to say, I was never asked to cook breakfast anymore.

I stayed at the Cuddy Mountain station for a couple of weeks, counting sheep that moved across from the Snake River from Oregon to some of the summer grazing areas. Then I went up to Bear, about thirty miles further on. This was the last outpost that you could get by automobile or wagon. From Bear, I was sent up to the Iron Springs area. I got ahold of an old pack horse whom I named Dynamite; my saddlehorse I named Pet—she was anything but a pet. And I packed in to the Iron Springs camp.

Iron Springs was an old promotional mining camp, started in about 1904. I don't believe there was ever any ore mined; it was merely a promotional scheme. The old buildings were still there, old log buildings. I made my headquarters in the old butcher shop in a valley surrounded by high mountains. A stream of water called Rapid River which was nothing more than a good-sized creek flowed by the cabin. The nearest person to me was at Bear, about forty miles away. For the first five weeks I was there, I didn't see another human soul.

This is the first time I had ever been away from home. I got quite lonely and was many times quite frightened. I had nothing but an old 32-20 six-shooter and only candles to light up the cabin in the evening. When I packed in I took some potatoes and a lot of rice, raisins and flour and so forth. While

I was at the Cuddy Mountain station, I had learned how to make sour dough biscuits, and when I went up to the Iron Springs camp, I took some sour dough with me and I kept that going all summer. (The first night I was up at Cuddy Back Station the ranger asked me to make biscuits. I had some faint idea of how to do it. I started in. When I emptied the dough, I cleaned the can out. At that time, I almost got fired because the ranger said he had kept that sour dough alive for six months, and now I had thrown it all out.) My meals usually consisted of raisins and rice primarily, and biscuits. Once in a while I would catch a trout or two.

My job was riding each day looking for forest fires. That summer there was no fire in this area at all, although I remember on one occasion I sighted a great deal of smoke. I followed the smoke for three days, but never could find the fire. Each week there was just enough rain to keep the things wet.

While I was by myself up there during that period, I imagine I lost considerable weight. About the first of August, the sheep came into the country and with the sheep were sheepherders. After that I never cooked anymore; I lived off the sheepherders.

On some occasions I went down to the Snake River—they had a ferry there—to count the sheep across. This is a drop of about ten thousand feet, and it was located in Hell's Canyon. I would count these sheep in and then I would go back up. I spent a lot of time visiting the sheepherders. The sheep were owned by Bill Stickney, who was a wonderful person. On several occasions he came in, and through those periods I would ride with him in trying to find lost bands of sheep.

My two horses, Pet and Dynamite, I would put out in the little valley each evening. Dynamite was rather old and very slow, and would never leave the valley unless he was

following Pet. Pet would leave the valley almost every night. I had a hobble on her front feet and then I had a rope around her neck. At the end of the rope I had a log. Even so, she would go three or four miles some nights. I got a bell and put it on Dynamite figuring I would hear them if they left.

I recall one night I was sitting at the table in the cabin, reading some 1,900 magazines under the candlelight. I remembered all of a sudden that I hadn't heard any bell. I became alarmed. It was a black night. I went outside walking around with my six-shooter in front of me. I almost stepped on Dynamite. He jumped up with the bell ringing and I started shooting. Fortunately I didn't hit anything.

When the sheep came in, the coyotes and mountain lions became interested, and every night I could hear them howling up on the mountainside. Anyone who has ever heard a mountain lion howl knows that it is quite frightening. Oftentimes it sounds as if it were a woman in distress. I used to sit down at the table with the six-shooter beside me, and the doors locked, sometimes quite scared.

Some years later, Bill Stickney sold his sheep to a man named Len Jordan who became Governor of Idaho in about 1952 or 1953. As a member of the Columbia River Compact Commission, I had occasion to meet him. On such occasions we would always talk about the Seven Devil country in Idaho. Later Governor Jordan was elected United States Senator from Idaho and on several occasions I have the pleasure of again discussing with him some of these early Idaho experiences.

Just how and why I was able to get through that summer without getting hurt, I will never know. I had a number of very close calls. I went out for a week from the Cuddy Mountain ranger station up over the top of Cuddy Mountain to put the telephone line back into commission. It was a single-wire telephone

line that came from Oregon across the Snake and up the mountain and down into Cuddy ranger station and then into Bear. The heavy snow had knocked the line down. This time I remember riding on top of ten to fifteen feet of snow. I would follow along until the line became visible, then I would cut it. Then I would go back and pull the wire out and connect it. On some occasions, later in the summer, my horse would fall through these snow banks where the snow had melted due to the water beneath. Fortunately, I never had any serious accidents, and about the tenth of September, I rode my horses back to Payette. Needless to say, my mother and family were very happy to see me because this was my first experience away from home any length of time and in an area where I didn't have very much company.

When the war broke out, World War I, there was a great deal of excitement in the area. The local military were called out, and I can recall seeing them training, and then going off to war. I remember going before the draft board. I still have my card that I received in 1918; I was only eighteen years old. When I went to Stanford, I entered the Army.

During that period the government was financing the Student's Army Training Corps at the colleges throughout the land. This was purely military, but you carried on some of your college studies at the same time. I think I joined the Army about the first of October, 1918, at the same time my twin brother did.

I can recall that when we went through our induction process, I gave my birthplace as Kellogg and my twin brother gave his birthplace as Wallace. I don't know what town we finally agreed on. Even to this day I don't know exactly whether my birthplace was Wallace, Kellogg, or Wardner. They were only three or four miles apart and the old log cabin was located right in the center.

The reason I entered Stanford was because my older brother Philip had gone to Stanford. I started to Stanford in about 1918, and my twin brother Ralph who was a year ahead of me started in 1917. At that time there wasn't any tuition at Stanford and the student body was limited to about five hundred women and one thousand men.

When I went to Stanford, I obtained a room in Encino Hall, which at that time was under the control of the Army. All during my four years, I remained in this hall, which was one of the first buildings built on the campus.

I can recall during the fall of 1918 that a football game had been arranged between Stanford and the University of California. Some years previously, Stanford and California had gotten into a big battle and severed relationships. California continued to play football and Stanford took up rugby.

In 1918, they arranged for another football game. Two days before the game which was to be at Berkeley, we had a big bonfire outside of the campus as a kind of a pep rally. I was one of those on charge of the bonfire. Also, we were still under Army control.

About ten o'clock that evening, a bunch of California students came down and kidnapped four of us and took us back up to Berkeley. For the next two days we were really given a going over. First they took us to a sorority house where they shaved our heads, leaving little patches of long hair on different places, and then tying ribbons on them. Then they kept moving us around, usually off the campus in the foothills of Oakland, and they were quite rough. They forced us to jump into cold swimming pools then paddled us as we came out. All this time we were A.W.O.L. from the Army, and the Army authorities were trying to find us. The California students kept moving us around, Sometimes as far away as San Jose.

The evening before the game we were brought back to the campus, and taken to one of the sorority houses where they put ketchup on the part of the hair left, and then when the hair hardened, they tied ribbons to it. We were taken into the back of the auditorium where the pre-game rally was to be held. They told us that as soon as we went out, they were going to throw about a thousand tomatoes and apples and things at us. Then just before they took us out, the President of the University, accompanied by some Army officials, came in and got us and took us back to Stanford. The next day I sat in the stadium and watched the game and was quite conspicuous with my bald head. California won the game.

Shortly after the war was over, in order to get by, I got a job hashing at the Pi Phi sorority house. I held this job during the remaining years of my college. With no tuition and about twenty dollars per month for my room in Encino Hall, the cost of going to Stanford was very minimal.

Unlike my two brothers, I had to really work to get through. Each quarter, prior to the examination, I would write home to Mother and tell her I thought I would be coming home pretty soon. Some way, I got through.

One of the requirements in the freshman year—at least one of the requirements before you could graduate—was the passing of “bonehead” English. English was my poorest subject, and I was afraid to take it during my freshman year because I was afraid I wouldn't pass it and would have to leave school. Actually, I didn't take “bonehead” English until my senior year. By that time, I had become acquainted with the Dean of Women who was also a former Pi Phi and was in charge of the “bonehead” English examination. (Some years later in reading an autobiography of Herbert Hoover, I read that he also was afraid he couldn't pass “bonehead”

English, and so didn't take it until his senior year.)

During my college years, I always tried to get work on weekends. I will never forget one day walking along the Quad, and the Dean of Men, Ezra McDowell, stopped me and said, "Hugh, do you want to make ten dollars?" At that time,

I waited about two hours for Charlie Fields. When he came in, I gave the envelope to him, and he was so happy about it that he gave me twenty dollars. That was the only time during my four years on campus that I was really rich.

Herbert Hoover was always one of my heroes. He had gone through Stanford as a poor boy, working his way through. He also hashed in one of the fraternities, and he was a manager of the football team. After taking his talk to San Francisco I sat in the audience on the next Thursday and heard him read his talk. Herbert Hoover was never what could be considered an orator; I don't think he ever spoke extemporaneously, but did speak in rather a crisp and precise engineering voice.

He was quite popular in California and over all the country, having done such marvelous work for the relief of the starving people of Europe that very early he was being pegged as a presidential candidate. I recall that possibly in 1920, Herbert Hoover's name had been put up in California as California's selection for President. I believe that in the state primary election, the people voted on Hoover and Hiram Johnson, if I remember correctly. There was a lot of rivalry going on and I remember most of the students at Stanford went up to San Francisco to help patrol the election booths to see that there wasn't some skullduggery going on. I forget now the outcome of that.

During all of my Stanford period, the President of the University was Ray Lyman

Wilbur. Dr. Wilbur was a medical doctor and taught during the presidency of David Starr Jordan, who was still living on campus when I was there. Herbert Hoover and President Wilbur were very close friends, and after Hoover was elected President, he appointed Wilbur as his Secretary of the Interior.

I recall that during my freshman year and sophomore years on two or three occasions members of my class were invited up to the home of David Starr Jordan for what we called a "bull session" with Dr. Jordan. He was a very loved man and certainly was world-renowned in his field.

During the spring of 1920, I had as a hashing partner at the Pi Phi house, Dink Templeton, one of the famous athletes at Stanford and of the United States for a great number of years. The girl he married some years later was a Pi Phi. About two or three years ago Dink passed away.

Most of the athletes at Stanford at that time were non-fraternity, and most of them were living in Encino Hall. I got to know most of them quite well.

During my junior year, I went down to Los Gatos about twice a month to mow the lawn for an artist, Jimmy Swinerton. At that time he was quite a famous artist, and he regularly ran a series of cartoons in Good Housekeeping called "Little Jimmy." Oftentimes when I would go down there, the first thing he would do would be to say, "I want you go to San Francisco and get some roses for my wife." He would usually give me fifteen or twenty dollars plus the car fare, and I would go up to San Francisco and come back that afternoon with the flowers. For that I was paid at least five dollars.

I was quite a movie fan. At that time they had two movie shows in Palo Alto, and while the cost of shows was not high, I could not afford to go very often. I conceived the idea

of approaching the manager of each of the shows and telling him that if they would give me a free pass, I would distribute the weekly program out over the campus. This was during the spring of my freshman year. For the next three years, I posted the programs on the trees and various places as I walked from Palo Alto to the campus, and I had free passes to both shows. When I left the campus in 1922, having graduated, I was able to sell this operation for thirty-five dollars, which enabled me to get off the campus.

During my freshman, sophomore and junior years, I played on the baseball team. I pitched for the freshman team. I remember a game we were to play with the University of California freshman team at Berkeley. We went up to San Francisco early, and the team had two or three rooms in a hotel in San Francisco. We decided that what we needed was a nice warm bath. Then a couple of boys brought up a bunch of beer and, having never sampled beer prior to that time, I started in, as did the others. The result was we lost the game, about eighteen to three. The following Saturday we got our revenge, however.

I also had a pressing and cleaning agency. The fellows in Encino Hall would bring down their suits to be pressed and cleaned. I would pack them up, and the cleaning establishment from Palo Alto would pick them up from me, and I would make a little money. Often if there was just a pair of pants and they were not in too bad a condition, I would use my own iron and press the pants and charge them full price.

I also used to be a pretty good printer, and I would print dance cards for the students who were going to the dances. I would use different colored inks. I never realized at the time that, being color blind, I probably had some very weird color combinations on those cards.

During the first summer, following my freshman year, I went back up to Payette and

got a job with the Forest Service. I was on a survey party which was working on a road construction job from near Horseshoe Bend to Smith's Ferry, along the north fork of the Payette. We lived in a little construction camp. The excavation work was all done by teams using mules and scrapers. The road along the canyon was about ten feet wide, and every few hundred feet, there would be a turn out where the road would be about wide enough for two cars or wagons to pass.

During the summer of 1920, I got a job selling the Standard Dictionary of Facts. I decided to carry on my operations in Modoc County, which is the most northeastern county of California. I bought an old second-hand bicycle, got on the train and came to Reno, and took the narrow gauge up to Alturas. At that time it was a narrow gauge railroad, extending only to Alturas. I spent about six weeks in Modoc County, riding the county on a bicycle and trying to sell these books. I think a lot of the ranchers took pity on me and bought some of them; at least I made about one hundred dollars.

Then about the middle of August, I decided to go up and visit my folks at Payette. I got a ride with an old chap who had a Model T Ford truck, and it had an old Ruxel axle on it. We started out from Alturas, and on the afternoon of the first day the car broke down. We were at that time out in the desert. The old man who was driving the car couldn't fix it; only the low gear would work. We made the rest of the trip of about 250 miles in low gear, and it took us five days to get up to Ontario, Oregon, which is just across the Snake River from Payette.

During the summer of 1921, I got a job on a survey party on the construction of the Exchequer Dam on the San Joaquin River.

I graduated around the first of June, 1922. My first job was as a transit man on a

survey party that was surveying a subdivision near Lower Lake in Lake County, about one hundred miles northeast of San Francisco. Lower Lake was a little country town at the lower end of Clear Lake, which is quite a large lake; I think about thirty miles in length. We lived in a camp about two or three miles out of Lower Lake. This was the first subdivision in the area.

It was very brushy and there were many rattlesnakes. I recall that after I had been there about a month, we were surveying a meander line along the lake and one morning we only surveyed one hundred feet; the balance of the time was spent in killing rattlesnakes. We disposed of some thirty snakes that morning, some of them several feet in length.

Lake County, at least the portion that I was in, was a very isolated area. To get in there you had to come over a very crooked and steep road out of Calistoga. The result was that there were not very many people coming in, and many of the old timers had never been out of Lake County. In fact, I knew several who had never seen a railroad train. There were quite a number of stills being operated in the area, and that was the first occasion I had of sampling bootleg whiskey. I wasn't very interested in taking too much of it.

The next spring, the spring of 1923, having completed the subdivision, I obtained a position with the East Bay Water Company as plane table man on a plane table survey from Eel River to Oakland for a proposed water supply for Oakland. I picked up the party near Healdsburg, and we passed by Calistoga and Napa and Vallejo, crossing the bay at Dillion's Point and ending up at the Pinole Dam site near Oakland.

This was the first time I came in contact with old Ike Ackerman. At that time, he was about sixty-five years old and he was a brush cutter, one of the hardest working fellows

I ever knew. He could work harder, and he could drink more liquor than anyone that I ever met.

Following the completion of the plane table survey, I stayed with the East Bay Water Company, running a preliminary survey for a dam on Upper San Leandro Creek. I got the company to retain Old Ike, and Ike was always my brush cutter. In the spring of 1924, we moved out to a construction camp at the dam site. The next two and one-half years, I was assistant resident engineer on the Upper Leandro Dam. This construction job consisted of an earth-filled dam about one hundred feet in height and seven hundred feet long, and a tunnel through the East Bay Hills about a mile in length to take the water through to Oakland.

Following the completion of the dam in 1927, I went to work for the county of Alameda in the County Engineer's office in Oakland. I was still able to keep Old Ike with me. The first few months was taken up in surveying a road from near the Upper San Leandro Dam up to the top of the East Bay Hills, and then down into Redwood Canyon. This road was to replace the road that the reservoir covered. The county didn't want to spend too much money on it, but they wanted it on grade. When the road was completed, it was probably the crookedest road in the United States. Oftentimes in the late years, as I fly to San Francisco, I can look down and see that road winding along the top of the mountain. However, I think some years later, they straightened out some of the curves.

At the time I was with the County Engineers office, Earl Warren, who later became Attorney General for the State of California, Governor, and now Chief Justice of the United States, was District Attorney of Alameda county. His office was right across the Street from the County Engineer's office.

I became acquainted with him at that time, and on a number of occasions since, I have renewed this acquaintance.

Some years later, in about 1943, I went to San Francisco with Governor Carville, and passing through Sacramento he said, "Let's stop and see the Governor." We went in, and I sat out in the reception room while Governor Carville visited with Governor Warren. Then they came out and when Governor Carville started to introduce me to Governor Warren, he said, "Well, I remember you," from his days with Alameda County. We went over and had lunch. On two other occasions, I met him in Sacramento.

While many people disagree that he is a good Chief Justice of the United States, certainly he had one of the finest personalities that I have ever known. He must have a good memory for faces, because I didn't know him too well in Oakland, but he remembered my name for almost twenty years. I thought it was rather sensational.

In 1928, it was quite apparent that a depression was coming. I learned that the county offices would have to reduce their forces. Since I was one of the junior members of the County Engineer's office, I figured I would be one of the first to go.

BEGINNING MY LIFE IN NEVADA

At that time, there was quite a bit of publicity in the Oakland papers about the dam on the Colorado near Las Vegas. I remember reading an article where it quoted the County Surveyor of Clark County, Mr. J. T. McWilliams, as stating that with the coming of the dam, that county would be bound to prosper. He said that if a person took care of ten acres in Las Vegas Valley, that ten acres would take care of him. I have often remembered that phrase over the years, because certainly I had the chance to get many times ten acres in Las Vegas Valley for almost nothing. The phrase was certainly a true one, because ten acres located in the right place in Las Vegas Valley now would certainly take care of a person as long as he lived.

In any event, I wrote to J. T. McWilliams, and received a reply that he could use someone in his office to help him in his surveying, and he suggested that I go down. On January 19, 1929, I packed up my old Packard, took my old transit and surveying equipment, and headed for Las Vegas.

Late that evening, I arrived and put up at the National Hotel. At that time, and National Hotel was one of the better hotels of Las Vegas. There was the National Hotel, the Las Vegas Hotel, which later became the Sal Sager Hotel, and the Overland Hotel. All of them were old hotels, but the National was considered one of the better ones.

The first day after arriving in Las Vegas, I went up and made myself acquainted with J. T. McWilliams. Mac, as everyone called him, was one of the pioneers of Las Vegas Valley, having arrived there prior to the construction of the railroad. He got hold of some land on the west side of the railroad right-of-way and subdivided it. This was always known as McWilliamston or Westside. He sold lots for about fifty dollars apiece, with probably five dollars down and five dollars a month. Mac and his wife, Mrs. Mac, treated me like a son for the several years I was in Las Vegas Valley. Mac was a county surveyor and did extra work. He always carried a box of small cigars in his pants pocket and was always puffing on a little cigar. I don't suppose that he ever went

anywhere without having a full box of these small cigars stuck in his pocket.

For the first year or two, I spent a great deal of time at Mac's home in Westside, and I could always look forward to a good meal anytime I went over there.

Shortly after meeting Mac, I looked around for a place to stay. Fortunately, I had learned that some folks by the name of Ogle were willing to take in someone, and I went up and made arrangements to stay at their place. The Ogles were wonderful people. They had a young son Bill. When I first went there, I suppose Bill wasn't over ten or twelve years of age. Mr. Ogle was a railroad engineer for the Union Pacific. He was also an avid fan of adventure books and magazines, particularly the one involving flight into space. His son Bill finished high school in Las Vegas and came up to the University of Nevada, and then became one of the famous scientists in the atomic field. Two or three years ago, he gave the address at the commencement exercises here at the University.

When I arrived in Las Vegas, I presume the size of the town was three thousand people. Less than a month to my arrival in December, 1928, Congress had passed the Boulder Canyon Project Act. The people in Las Vegas knew that the big dam on the Colorado River at Black Canyon would soon become a reality. This was the reason I went there; I knew that there would be lots of engineering work, and I was young and unattached at the time.

The town started to fill rapidly. I presume that most of the people who landed there during those early months were promoters; mining, land, and promoters of all types. Anytime in Las Vegas when you wanted to get a crowd around you, all you had to do was to get a rock and start showing it to somebody on the street corner. Before you knew it, there

would be fifty people around trying to get a look at that rock.

I remember one promoter who came in was the famous rain-maker, Charles M. Hatfield. Just a short time before, Hatfield had been hired by the city of San Diego to bring about rain and end the drought. Hatfield set up his equipment down there and within a few days, San Diego had the most severe rainstorm they have ever had; flooding the town, and causing millions of dollars of damage. Instead of paying Hatfield for the job, they sued him for damages, and Mr. Hatfield had to leave San Diego in somewhat of a hurry. On a number of occasions I took him out over the valley to show him around. He was quite an interesting fellow.

As a young fellow and one who was always impressed with people who had made some kind of a name for themselves, I was quite impressed with Mr. Hatfield. He had a very deep voice. Oftentimes as we were riding along, he would ask me some profound question that I didn't know anything about. Then without waiting for me to even tell him I didn't know anything about it, he would proceed to answer it. They were all scientific questions.

Articles regarding Hatfield's rain-making activity appeared in many national magazines. I recall a few years ago reading one in the Readers' Digest. There are still people living in San Diego who remember the big flood, and who can't be convinced that Hatfield was not solely responsible for the flood.

The main work, as far as I was concerned in those early days, was surveying for subdivisions. Land was cheap and the promoters would come in and get forty acres of land, have someone survey it, and then sell the land if they could. I had lots of work at that time, but the promoters never had any money. They wanted to give lots instead of money. Had

I known what would happen in later years, I would have been much better off taking lots instead of money, but as a result of not having much cash available, I got interested in mining activities. I will come to that later.

I started to do most of McWilliams' field work and drafting, and this kept me quite busy and kept me in money to buy food and so forth. One of the first large jobs I had down there was surveying all of the springs for stock watering applications in the Gold Butte country. A company by the name of McGonigle and Gentry wanted to make applications to appropriate water from all the springs in that area for stock watering purposes. The Gold Butte area lies between the state line of Arizona, the Virgin River, and the Colorado River.

At that time, St. Thomas was still a remote little Mormon community. In order to get over to the Gold Butte country,, we had to cross the Virgin River just below St. Thomas. The bridge had burned down sometime before, so you would have to get a team of horses to pull your car across the river. We found two section corners near the Virgin River, but those were the last section corners I was able to find.

Mac engaged me to make the survey, and I had a couple of chainmen, a flagman, and a guide. The guide was quite a famous character, Bill Garrett. His uncle, Pat Garrett, was a sheriff in New Mexico and was the law officer that shot and killed Billy the Kid. In later years, I learned that Billy Garrett himself had got into some trouble in Utah, having been in an argument with some fellow, shot and killed him, was tried and sentenced to hang. Some way or other, he got out of it and came down and took up domicile in this very remote part of the state.

Bill had a fellow living with him, Shorty Coleman. The two of them lived together

there for well over thirty-five years. About two years ago, Bill died and about a year or so prior to that, Shorty passed away.

Bill was a good guide. He would tell me, "You head over the mountain in such a direction and you will find a certain spring." We never missed. Some of the springs are located in areas that you couldn't get to with an auto, so we packed in.

Bill, in his little shack there at Gold Butte, made his own whiskey. He always had a barrel of corn mash or wheat mash working in his kitchen. On two or three occasions when we camped at Gold Butte, Bill would go Out behind the house and haul up the still that he had hanging down an old abandoned well. Then we would sit by the campfire while Bill make a gallon or so of whiskey. He never sold the whiskey. What he and Shorty didn't consume themselves, he gave to his friends.

I had a head lineman by the name of Harry Howell. He was quite a prospector. In fact, everybody in that country did a lot of prospecting. I would send Harry ahead a thousand or so feet with a target to survey towards, and as Harry went along he would keep his eyes on the ground. If he found a dike or a formation of any kind—even though it was at right angles to the direction he was supposed to be going—he would change directions. On many occasions I had to go forward and actually find him, bring him back and get him in line.

This period was during Prohibition, and stills were located at almost every accessible spring in and around Las Vegas. They tell one story that I know is true because it was told to me by two or three people. One day Sam Gay, the old sheriff of Clark County who was a character himself, came over in the Gold Butte country bringing with him a federal revenue officer, supposedly looking for stills. They came along and stopped at Bill's cabin.

(The road is about two hundred feet from the house.) The sheriff got out of his car and started up toward the house and met Shorty Coleman. The sheriff said, "Shorty, where is Bill?" Shorty says, "Well, Sheriff, Bill is back in the boulders making a little liquor." The sheriff said, "Well, Shorty, tell Bill hello." He turned around, got in the car with the revenue officer and drove on.

This Gold Butte country was very interesting. As I made my traverse to the various springs, I noted in my notes objects of interest such as petrified trees, hieroglyphics, prospectors' graves and so forth. When I made the map of the survey, I showed all of these interesting things on the map. [See map in Special Collections] I have often thought that this would be a wonderful country for a dude ranch. One arm of the Colorado River now goes up the Virgin River Valley, covering the old town of St. Thomas. In order to get into this area, one would now have to go up to Bunkerville, cross the river and come back, or take a boat up the Virgin River branch of Lake Mead and have someone meet them on the Gold Butte side.

Las Vegas, when I first went there, was a very nice town. About the only paved streets were South Fifth, which is now the road to Los Angeles, and Fremont Street through the middle of town.

I soon became acquainted with the old timers. As I have mentioned, the first man I met was J. T. McWilliams and Mrs. Mac. Then there was Jim Cashman, who was the Buick dealer; Walter Bracken, who was the manager of the Las Vegas Land and Water Company, a subsidiary of the Union Pacific railroad; Dr. Roy Martin, who was quite a promoter but also one of the leading doctors in town. Bill Beckley operated a men's clothing store with his brother Jake. Bill has a son now living in Las Vegas who is one of the leading

attorneys. Art Ham, another leading attorney, had his office in the old Mesquite Building on the same floor as McWilliams' office. Also on this floor was Dr. Smith, a dentist, and attorney Roland Taylor, Ham's partner who later became the district judge. Cy Wengert at that time was in the bank.

Leo McNamee was one of the leading attorneys. He had a brother who soon after graduated from law school, Frank McNamee. Frank later became a member of the State Supreme Court.

Bob Griffith was then just a young chap about my age. Bob's father was quite a landowner in the area. Besides owning land in Las Vegas, he owned most of the land in Charleston Canyon, Kyle Canyon, and the Charleston Mountains. I have mentioned Sam Gay, the sheriff. Then there was Al Cahlan who was with the Las Vegas Review-Journal, as was his brother John who handled the sports. "Pop" Squires was a lovable old man who ran the *Age*—a weekly paper in Las Vegas. Other old-timers were Bill Ferron who owned the White Cross Pharmacy, and Gene Ward who owned the Mesquite Grocery store. Another man I should mention was Dr. F. M. Ferguson, who later became my brother-in-law. He was responsible for the building of the Las Vegas hospital. Another man who was quite well known in the area was Harley Harmon. Harley later ran for Governor but didn't make it. He was appointed to the Public Service Commission some years later. His son Harley E. Harmon, is one of the leading citizens of Las Vegas now. At the time I arrived in Las Vegas, I recall that George Marshall, who is now District Judge, and Roland Wiley, an attorney, got there the same day that I did.

I mentioned that I had gotten interested in mining. Quite early in my stay in Las Vegas I did considerable prospecting for non-metallics. I had my office, which was

located on the second floor of the Mesquite Building, full of rock samples. My first venture into actual mining operations occurred in Wheelbarrow Peak area of Nye County, about 120 miles from Las Vegas and not far from the present Atomic Energy Commission proving grounds. I became acquainted with Louis Cramer, who was a geologist. He had just come out from Texas. He got lucky down there on an oil lease and made \$100,000, but in the celebration that followed in Fort Worth, he got rid of the \$100,000 pretty fast. We got interested together in the Wheelbarrow Peak.

This was quite a remote area, but it was good looking country as far as ore veins were concerned. We decided to sink a shaft in an area which looked promising, but first we organized a company. Harley Harmon was our attorney. We organized the Gold Range Mining Company. I was president; Louie was vice president. We didn't have any money, so the only way we could do anything was to sell some stock. That was my job. All we tried to do was sell enough stock to keep the small crew in provisions and to buy dynamite, lumber, and other equipment. Actually we sank the shaft about one hundred feet, but the ore didn't improve any and we had to give it up.

An interesting occasion during that mining activity of Wheelbarrow Peak area was the winter of 1930 and 1931. That was a very severe winter and Louie was at the camp along with his wife and two-year-old daughter. We had three old miners who were working for food and mining stock. The snows came, and after about four weeks, I became alarmed over the fact that I knew that they must be out of food. I was afraid Louie would probably have tried to snowshoe out to Indian Springs, about seventy or eighty miles away. Not having any real snowshoes, I was fearful that he might not make it.

I wired down to Moffat Field to see if I could get a plane to come up and drop some food. I explained the situation in the telegram. The next morning I received a wire stating that a plane would land the following morning about nine o'clock, and for me to meet it with some food and direct the plane to the mining camp. The telegram was signed by Colonel Arnold. Later this man became known as "Hap" Arnold, who was the general of all the air forces during World War II.

This old plane that they sent up was a two-engine plane with a cockpit in the center. Off on each side was a bucket seat. There was no cover; everything was in the open. I had three sacks of food. I sat in one of the buckets, a sergeant sat in the other, and we started off.

This plane was one of the best bombers we had at the time. It had a cruising speed of about ninety miles an hour. I didn't realize just how cold it would get during January. Fortunately, we found the camp, which was completely snowed in. We dropped the food and went back. Later on, I learned that they were completely out of food and that Louie was afraid he was going to have to start out in a day or two. The food landed in deep snow, and nothing was lost whatsoever.

I got well acquainted with Clark County. I presume that I prospected every hill in that whole area.

I mentioned earlier that the Boulder Canyon Project Act was passed by Congress in December. One provision of the Act was that it would become effective in six months, if the seven states which signed the Colorado River Compact that was developed in Santa Fe in 1922 gave legislative approval in the event that only six states signed a compact, and one of the states was California, the Act would become effective.

I can well remember that day in June when President Hoover declared that the Act

was effective. There was a big celebration. Everybody in town was on Fremont Street. Even though it was Prohibition, beer and hard liquor were available to anyone who wanted it. It was quite a celebration. Everyone yelling, the band playing. As usual with such celebrations, some people ended up in numerous fights in the alleys off Fremont Street.

Immediately after the Act became effective, I got a job with the telephone company to survey a telephone line from Las Vegas to the Dam site. This was in July and August and it was extremely hot. The area where Boulder City is now located was nothing but sand dunes, and if you attempted to drive out over that area, you would get bogged down and have to be pulled out.

Shortly after the Boulder Canyon Project Act became effective, Walker Young of the Bureau of Reclamation came to Las Vegas to head the Bureau's activities in the construction of the dam. Through the McWilliams' I became very well acquainted with Walker Young. Sven to this day, we exchange Christmas cards, and when I get to Denver, I oftentimes call him up. He retired from the Bureau many years ago and became president of the Thompson Pipe Company, which manufactures pipes and water measurement equipment in a factory in Denver. In the summertime during the construction of the dam, we would often spend Sundays up in Lee Canyon with the Youngs.

Some years previous, Mac had acquired most of the property in the main valley of Lee Canyon. It was a beautiful area with large pine trees, and during the wintertime it was completely snowed in. Mac was quite a public spirited man, and he often told me after he had had a few glasses of beer that he was going to give all his land in Lee Canyon to the Forest Service for a public park. Actually, in the later part of the 1930's, Mac turned all of his land,

consisting of over one thousand acres, over to the Forest Service, except fifty acres. The Forest Service had agreed to subdivide this fifty acres into lots which Mac could sell.

Immediately after the subdivision was completed and in about 1942, Mac invited me to go to Lee Canyon with him. When we got up there, he said, "Hugh, I want you to pick out any lot you want; I am going to give it to you." I had a choice of all the lots and I naturally picked the best one; at least the one I thought was the best. Shortly after that, Mac passed away and Mrs. Mac gave me a deed to this lot which contained about six-tenths of an acre. It was off the valley floor a little ways and you looked across the valley and see the big mountain formation that was known as "Turtle." I still own this lot. Not long after Mrs. Mac deeded the lot to me and before she had sold or given away any of the other lots, she turned the subdivision back over to the Forest Service, so I think I am probably the sole private owner of the property located within the Forest Service boundary in Lee Canyon.

I was up there a year ago, and they are developing a recreation area which is adjacent to my lot. I have offered to sell this lot to the Forest Service or to exchange it with some other property, as I have long felt that it shouldn't be owned by private parties, as it would interfere with the operation of the recreation area. I have had several chances to sell it and for the past year, the Forest Service has been working on some sort of an exchange. Whether or not it can go through, I do not know. In any event, I still own this beautiful plot at the present time.

One day when I was in my office in the Mesquite Building next to Mac's office, a girl whose name I have forgotten and who was a secretary to Art Ham, came down and asked me if I wanted to go out to a party that night. She was going out with Frank McNamee, and

there was another girl whom she would like to have me meet. I said, "O.K." That night I met Ethel Oxley, who a year later became my wife. We were married on June 3, 1931, in the home of Dr. and Mrs. Ferguson. A chap by the name of J. W. "Weary" Wilson was my best man. Al Cahlan and his wife, as well as Johnny and his wife were present. Mrs. Ferguson, whose name was Maud, had come to Las Vegas about 1925 with Dr. Ferguson. Ethel Oxley came in 1927 to teach school. Ethel and her sister Maud were from a small town, Athens, in southern West Virginia. Ethel had attended the teacher's college at Athens.

She started teaching in Nevada under Maude Frazier in 1925. About that time, she became acquainted with Eva Adams, who was also teaching in Las Vegas at the time. And Nevada Pedrol, who later married Buck Wheeler.

A few months after getting married, I realized that my experience in mining and so forth was not working out, and that I would have to get a job. In 1933 I first entered State service in a highway survey party there in Las Vegas. The division engineer was a very fine man, Charlie Boyer, who was the son-in-law of Pop Squires. The man in charge of our party, Dan Indermuhl, is still in the Highway Department in Carson City. Also in the party was Stan Sundeen and Victor Clyde. Sundeen is one of the top men of the Highway Department at this time, and Vic Clyde is now a division engineer.

The first job we worked on was concerning a portion of South Fifth Street, out as far as the Red Rooster. After that job was done and in order to keep us on the payroll, Dan Indermuhl worked out a deal for us to dig gravel exploration pits up toward Apex. I can recall that during July and August of 1933, we were up there digging holes about five by five to see if we could find suitable gravel for

highway purposes. That was a job that was really the toughest because of the heat and the physical work attached.

I recall another occasion of interest. The construction program had been in operation, and shortly after Franklin D. Roosevelt was elected President, they got him to come to Las Vegas to attend a ceremony that was at what was then called Boulder Dam. Originally the Dam was to be called Hoover Dam, but Roosevelt changed it to Boulder Dam. Fortunately, however, when Harry Truman became President, he changed it back to Hoover Dam in honor of his old friend.

The W. P. A. had built a road off the Kyle Canyon road up in the Charleston Mountains, along the side of the mountain. Some way or another, they enticed President Roosevelt to inspect this road. Jim Cashman furnished an open Buick touring car and Archie Grant a Lincoln. I remember seeing the party starting out from Las Vegas with the President; Jim was driving. This road that the W. P. A. boys built was a narrow road, and ended up butting right against a mountain wall. In other words, they could go only so far, and then they stopped. They got the President up there and then they discovered that Jim could not turn his Buick around. They got the President out of the car, and by manual effort turned that car around on that little ridge and got the President safely back to Las Vegas. Archie Grant, now a regent at the University of Nevada, had Mr. Roosevelt in his car.

Another occasion was the beginning of the construction of another branch line off the Union Pacific main line, just south of Las Vegas, which was to go to Boulder City and to the Dam site. They had a big celebration. Ray Lyman Wilbur, whom I mentioned earlier as President of Stanford, was then the Secretary of the Interior under the Hoover administration. Secretary Wilbur came out to

give the dedication speech at the point on the Union Pacific railroad where the branch line took off. It was another quite large celebration, and ended up on the front lawn of the old county courthouse where Secretary Wilbur again made a short address.

Las Vegas Valley started to grow very rapidly in population upon the start of the construction at Hoover Dam. A tent town was set up just north of town and is what is now known as North Las Vegas, at that time it was called Hoover Town because it was nothing but tents; I guess it was so named by the Democrats. Subdivisions went up all over the valley, new buildings went up. Everybody was wondering what would happen to Las Vegas following the completion of Hoover Dam.

I recall Walker Young telling me that in all his experience with the Bureau of Reclamation, when they got through with a dam, then the people moved out. However, it didn't work out in this case. People continued to come in.

Then of course, a few years later when the second World War broke out, the big B. M. I. plant was set up between Las Vegas and Boulder City and the town of Henderson was created. I have often wondered what would have happened if a war had not come along. There wouldn't have been any B. M. I., there wouldn't have been any Henderson, and the chances are that progress in Las Vegas would have been held back many, many years.

Early in 1934, my wife had developed hayfever to such an extent that I asked Charlie Boyer, the division engineer, if I could be transferred north. This was worked out, and in the first part of June, 1934, we drove up to Carson City and reported in the state highway office, which at that time was located on the first floor of the Heroes Memorial Building. The first man I talked to was Huston Mills

who later became State Highway Engineer, and is now retired and living in Carson City.

I spent about two weeks in Carson City living in the old Arlington Hotel and doing some surveying out on the highway toward Minden. Otis Wright, the present Highway Engineer, was the chief of party. I was transit man.

After the middle of June, I was transferred to Lovelock where a new road was being built from the city limits of Lovelock to the overpass a few miles eastward. My wife and I arrived in Lovelock and the first thing was to find a house. We finally found an old house located about two blocks off the main highway through town. Lovelock was one of the most friendly towns of that time that I had ever visited. We went down to the grocery store to get some groceries and the groceryman wouldn't take our money. He said, "We will just charge it up and you can pay at the end of the month." Everything we got, they insisted that we set up a charge account. Apparently in those days they trusted people.

There were two incidents I remember in Lovelock, one of them being the American Legion state convention and the other, the visit of the political parties prior to the November election in 1934.

I had been a member of the American Legion in Las Vegas, so shortly upon arriving in Lovelock, I joined the post there. In July they had the state convention. It was really quite a friendly convention, and I became acquainted with many people whom later I worked very closely with.

During those days prior to the election, all of the candidates for each of the parties would travel together. The Republicans were in office in the state at that time (1934), so the Democrats came first. Richard Kirman, who was a banker in Reno, was running for Governor. I don't recall all of the candidates.

Mr. H. C. Schmidt was running for Nevada State Controller, and there were several others.

I recall that the rally was held in the old theater there in Lovelock and that Dick Kirman had a cold and could hardly speak. Some of the other candidates were dressed in what appeared to be old clothes, and didn't really look too well dressed.

Along came the Republicans. Morley Griswold, the Lieutenant Governor, had been acting as Governor following the death of Governor Balzar. I can recall Ed Peterson who was the Controller and later became a very great friend of mine. W. G. Greathouse was Secretary of State, Tom Lotz was Surveyor General. These people had been in office for several years and looked spic and span. Apparently that didn't mean too much, because a month or so later they were all defeated and the Democrats moved into office in Carson City.

Following the completion of the road job east of Lovelock and over to the first overpass, we stayed in Lovelock that winter on another construction job, putting in the curb and gutters along the main street in Lovelock. This was done during the wintertime and it got quite cold. Every morning the concrete aggregates had to be heated before they could be mixed. C. C. Allen was the resident engineer and I was chief of party. C. C. always managed to stay in the office on those cold days, so I took care of the outside work.

Early in 1935, following the completion of the job in Lovelock, we were transferred to the Pyramid Lake job. Ethel and I moved to Sparks. C. C. Allen continued as resident engineer, and an office was established in Sparks. The job started out near the old Wedekind Mine and went to Pyramid Lake. This was in the early spring. Construction got

started within about ten days after we arrived in Sparks.

I should mention that while I was in Las Vegas, I first became acquainted with Alfred Merritt Smith. At that time he was working for the University of Nevada on some type of an extension course which provided for the training of prospectors. Torn Smith traveled from community to community around the state, spending two or three weeks in each place, and gave the people who were interested information on the rudiments of prospecting; how to determine different metal and so forth. Torn had heard that I had been doing a bit of prospecting in the area and one day he came up to my office in the Mesquite Building to see me. A couple of days later, he asked me if I would come down and speak to the class on the location of mining claims. I did.

I didn't realize at the time the far-reaching effect of my befriending Tom Smith. It was in the Spring of 1935, shortly after the inauguration, when Tom Smith had been appointed State Engineer by Governor Kirman. I remember that one evening Ethel and I were both in bed and there was a knock on the door. I got up to answer it, and there was Tom Smith. He came in and said, "Hugh, I would like you to be Deputy State Engineer." I was somewhat flabbergasted, because I had always visualized being in the State Engineer's office. He said the salary would be \$250 a month. At that time we thought that would make us rich. Two hundred and fifty dollars a month in 1935 was a pretty good salary. We didn't hesitate a minute to accept the position. Governor Kirman also appointed Robert A. Allen as State Highway Engineer so a day or two following, I went over to Carson City and told Mr. Allen I was going to leave the Highway Department and become Deputy State Engineer.

I think probably that Tom Smith had more effect on my life than any one other man. He was a man of great stature, both physically and mentally. He was about 6'6" in height. He graduated from the University of Nevada shortly after the turn of the century as a mining engineer. He had spent many years with the Southern Pacific Company making studies as to the mineral possibilities of railroad land both in California and Nevada.

Bob Allen also became a very great friend of mine. He influenced my life to a considerable extent in later years.

I left the highway job at Sparks on the last day of June, and reported to Mr. Smith on the first working day after July first. I can recall that prior to going over to Carson City, I had learned that Mr. Smith was retaining the Assistant State Engineer, Harry Reppert; also F. N. Dondero, who was the office engineer, and Archie Millar, who was the field engineer. All these people were Republicans.

At that time I, too, was a Republican, and I believe my wife was a Democrat. In fact, my whole family were Republicans. My wife and I talked it over and decided that it wouldn't do Mr. Smith too much good if he hired a Republican as a Deputy, so I went down to the Sparks City Hall and reregistered as a Democrat. I don't think that for the next twenty-five years anyone knew what my political affiliations really were. I can remember when I was reappointed to the position of Director of the Department of Conservation and Natural Resources by Governor Sawyer in 1957. In fact, I was his first appointee. He didn't ask me what my politics were. Some of the Republican papers came out with the assertion that Governor Sawyer was appointing nothing but Democrats, and he should do what Governor Russell had done before him, appointing some members of the opposite party. The Governor

replied in an interview, "That is not true; look at Shamberger, I appointed him." This was followed by a declaration by the state Republican chairman that if the Governor didn't want to claim me, the Republican party would. Actually I was a Democrat, but Governor Sawyer didn't know it.

THE OFFICE OF THE STATE ENGINEER

The first State Engineer was A. E. Chandler, in 1903. Other people of note who have served in this office have been Emmet Boyle, who was State Engineer in 1910 and later became Governor; and William Kearny, who became State Engineer in 1911. Bill Kearny was an engineer and then later became a lawyer. He then was recognized as one of the best water attorneys in the state, although he caused the State Engineer more trouble than any other lawyer, because in most all cases, Kearny was representing a party who was in conflict with the State. Then in 1919, James Scrugham became State Engineer. After he had been State Engineer for a few months, he took a leave of absence to go into the Army. In 1919, Scrugham was again State Engineer. In 1922, Robert Allen was State Engineer. I especially mention Bob because he has served the state in so many capacities, not only being State Engineer but State Highway Engineer, chairman of the Public Service Commission, and many other ways. Then George Malone became State Engineer in 1927, and he later became a Senator. He was followed by Alfred

Merritt Smith in 1935, which was the time I became associated with the office. When I was appointed director of the Department of Conservation and Natural Resources in 1957, I appointed Edmund Muth as the State Engineer and he served until 1962, when he resigned. Then I appointed Elmo De Ricco as State Engineer, and he is presently director of the Department of Conservation and Natural Resources.

I think it would be appropriate if I were to describe some of the duties of the State Engineer and also the reasons that the office of State Engineer came into being. First, in order to provide a basis for a complete understanding of the system of water rights in Nevada, it would seem pertinent to give a brief resume of the two theories or doctrines which have had a profound effect on the evolution and growth of western water laws; that is, the doctrine of riparian ownership and the doctrine of prior appropriation.

The doctrine of riparian ownership is a product of the English or Common law and means "Every appropriator of land on the

banks of a natural stream has an equal right to have the water of this stream to continue to flow in its natural course as it is wont to run, undiminishing in quantity and unimpaired in quality, except so far as either of these conditions may result from the reasonable use of water for irrigation or for other lawful purposes by upper appropriators.” The riparian theory is in general use in the states easterly from the 100th meridian, and, in fact, in certain portions of the West.

The doctrine of appropriation is the outgrowth of a custom of unwritten law or precedent established in the early mining days of the West. It means “first in time is first in right,” commonly referred to as priority. Nevada early adopted the appropriative theory because its supply of water, even with the highest beneficial use, was insufficient to supply its needs. Such adoption did not occur until after earlier court decisions had given recognition to the doctrine of riparian ownership. Under the appropriative doctrine, the appropriator could divert water from a stream and carry it to lands that he owned not contiguous with the stream, and, by making beneficial use, acquire a right.

Under the riparian doctrine, it applied only to land ownership that was adjacent to the stream. Under that doctrine, no one had a right to divert water from a stream and carry it through a canal to lands that were not contiguous, or riparian, to the stream itself.

In 1885, the Nevada Supreme Court approved the appropriative theory, and has on subsequent occasions exercised its rejection of the riparian doctrine. In other words, our courts since 1885 have ruled, and the legislature declared, that there can be no ownership in the corpus of the water in the state of Nevada, but that the right to the use of water only may be acquired; and that beneficial use shall be the basis and the measure of the right.

The real incentive to the passage of the reclamation law of 1903, by which the office of the State Engineer of Nevada was created, was the desire of the state to cooperate in every way with the Secretary of the Interior in the construction, operation, management, and maintenance of irrigation works in the state of Nevada under the national Reclamation Act approved by Congress on June 17, 1902. Within eight months following the adoption of the legislation, the construction of the Truckee-Carson Project was commenced. In fact, in November, 1903, construction work started on Derby Dam on the Truckee River under the Truckee-Carson Project. This was the first construction work of any Bureau of Reclamation project in the West. It might have been due to the fact that Nevada’s Senator Newlands was the author of the Reclamation Act.

Although the Nevada Act of 1903 created the office of State Engineer primarily for the purpose of the adjudication of water rights which had become vested or were then in the process of initiation, it neglected to provide a specific method by which future rights could be legally acquired. Hence, the 1905 Legislature provided exclusive methods of subsequently initiating and perfecting water rights: by application to the State Engineer for permission to appropriate and apply water to beneficial use. There have been many amendments to the Water Law since 1905. In fact, in 1913, the water law was entirely rewritten. Then later, certain parts which had been declared unconstitutional were amended.

Under Nevada water law, there are two classes of water rights by appropriation. First, the so called vested rights, which were rights appropriated prior to March 1, 1905, before any definite law concerning the appropriation of water existed; and second, application

rights under which water is appropriated and beneficially used by virtue of permits granted by the State Engineer, upon due application being made to him.

Rights prior to 1905 are thus classified as vested rights, the magnitude and extent of which can only be determined by a process of adjudication by the State Engineer as outlined in the water law. All rights initiated subsequent to 1905 are clear cut and well defined as to magnitude and extent, having been granted on direct application to the State Engineer.

In order to make a record of rights acquired prior to 1905, the appropriator could file with the State Engineer a proof of appropriation together with a map. This merely made a record of his claim, but established no water rights. However in later years, these proofs of appropriation became very valuable when the adjudication was made on a strewn system, because oftentimes the original appropriator had passed away, and no knowledge was available as to when the appropriation had been initiated.

During my period in the State Engineer's office, we tried to encourage some of the old timers to make a record of their water rights and also to request an adjudication. Most of the adjudications that had been carried out by the State Engineer prior, were carried on because some fight had developed between water users, and the courts had ordered that the stream be adjudicated. The State Engineer could, of course, adjudicate any stream he wanted to, even if there were no contests between water users. But due to the small staff that the State Engineer's office always had, about all we could do was to take care of those adjudication cases which originated from battles between water users.

To make a determination of relative rights to water from streams involving

examination, and upon proof of use of water, field examination and reports, character of soil, and so forth, determination of priorities and duty of water requirements, the State Engineer would first develop a preliminary order of determination, then hold a hearing, then prepare a final order of determination which was submitted to the court. The court then would hold hearings on the order of determination and would give the final answer as to the water rights that had been vested. Following this, the State Engineer could issue certificates to the appropriators in accordance with the final court decree.

The work of determination of vested rights of water resources of the state have been in active progress since the creation of the office in 1903. It appears that the State Engineer's office has initiated many proceedings: some fifty streams had been adjudicated and when I left the office, and we had a number of adjudications in process. Although the vested rights for, the use of water of most of our major streams have been adjudicated and are in the process of adjudication, there are still a number of minor streams where the vested water rights remain undetermined. Unfortunately, the greater portion of the old timers that could submit evidence as to the initiation of a water right have passed away, and we have very little to go on in some cases.

One of the biggest jobs the State Engineer has to do is administration of the court decree of a stream system. Our greatest difficulty was always on the Humboldt River because that is the largest river entirely inside the state of Nevada. However, the state does administrate decrees on water rights of many other streams throughout the state. The matter of application to appropriate water also requires a great deal of work. I think there have been over 22,000 applications filed to appropriate water since the initiation of the procedure for

acquiring water rights in 1905. In many cases, these applications are protested and as I will describe, require investigation and hearings.

The office of the State Engineer at the time I joined it was located in the Heroes Memorial Building, which was built immediately following World War I. The State Engineer had most of the second floor, all except the Legion Hall. The first floor and basement were occupied by the State Highway Engineer.

On my first day in the office of the State Engineer, Rita Arkell, Mr. Smith's secretary, took me across the street to meet Governor Kirman. The governor had assumed office only two or three months previously, and prior to that, was a banker in Reno. Governor Kirman was a very fine gentleman, certainly not a politician. He gave everyone to understand that he was going to serve only four years, and would under no consideration try for a second term.

Just a day or two previous to my joining the State Engineer's office, Alfred Merritt Smith, who had been appointed State Engineer in March, was on the way to Fort Churchill with Mrs. Smith for dedication of some work in the restoring of one of the buildings by the C.C.C. camp. On his way there, his car turned over and both Mr. and Mrs. Smith were hospitalized. Harry Reppert, the Assistant State Engineer, and F. N. Dondero, the office engineer, gave me a great deal of help in getting acquainted with the activities of the State Engineer's office, and in particular showing me what my work would be.

In the office at that time, in addition to Harry Reppert and Dondero, were Charlie Thiex, the office manager, Rita Arkell, Mr. Smith's secretary, and Alta Springmeyer. At that time, A. V. Tallman was Supervising Water Commissioner of the Humboldt River; the following year, 1936, he was replaced by Archie Millar. Alta Springmeyer resigned in

October, I believe, to marry Charlie Thiex. It wasn't until many years later that she came back as my secretary.

By virtue of his office, Mr. Smith was ex-officio member of the Colorado River Commission and also the Commission secretary. At that time, the Colorado River Commission was negotiating for power and water contracts, and about eighty percent of his time was taken up in the work of the Colorado River Commission. He was also ex-officio member of the Public Service Commission as well as the State Planning Board. So the work of the State Engineer's office was left primarily in the hands of Harry Reppert, F. N. Dondero, and myself.

In 1935, the work of the State Engineer's office was concerned primarily with adjudicating some of the surface water, in administering the 1925 Stock Watering Act, and in acting on applications to appropriate water. The adjudication of the Humboldt Rivers which was quite lengthy proceedings had just been completed when I entered the State Engineer's office. However, there were lots of loose ends to gather together. Much of Harry Reppert's time was spent in connection with the Humboldt River. The waters of the Truckee River, Carson River, and Walker River were all adjudicated by the Federal court insofar as they were interstate stream systems.

Harry Reppert was a really wonderful man. He graduated from the University of Kansas and for many years was a cadestral engineer, surveying out the land grid systems in the western United States. Harry had retired from the government and had purchased a farm near Stillwater, in Churchill County. Upon the election of Fred Balzar, George Malone was appointed State Engineer and George, looking around for an assistant, remembered Harry Reppert from previous acquaintance. He went over to Fallon and talked Harry

into leasing his ranch and moving to Carson City. Harry was a large man, very jolly and I enjoyed having the opportunity to work with him. Unfortunately, he passed away in 1942 from a blood clot. Then Mr. Smith appointed me as Assistant State Engineer.

I can recall Harry Reppert telling me on many occasions that George Malone had told him when he accepted the position that he was going to have full charge in acting on applications to appropriate water and on administering the Stock Watering Act. He was not under any consideration to take advantage of politics. Malone himself was one of the most active politicians in the state, and I think it was much to his credit that he divorced all politics from the office of State Engineer. That policy was followed all during Mr. Smith's regime as State Engineer, and during mine, as well as the present office. Politics was not made a part of any of our decisions.

In 1935, the only ground water development of any magnitude was in the Las Vegas valley. Las Vegas became a town and the division point for the Union Pacific railroad due to the large springs which flowed by gravity to the town site. As people moved in, they drilled wells and, in most cases, obtained artesian flows. Other than that, there were few concentrated areas of well development anywhere in the state. Most of the applications to appropriate water were on springs and surface streams.

My first experience on a field trip, after taking over as Deputy State Engineer, was to go out to Lund and Preston, Nevada, and settle a water dispute between the townspeople of Preston and those of Lund. I recall that I was measuring the stream flow from the springs of Preston down to Lund with a current meter, and I was down doing the measurements. On one bank sat about a dozen of the Preston people and on the other bank the Lund people

were congregated. They were throwing insults back and forth and also some of the remarks were thrown at me. Finally, I got the stream measured and worked out an agreement.

These two communities were populated 100% by Mormons. I had quite a number of interesting experiences in that general area. While the two towns had a great deal of rivalry, on many occasions they worked together, but when any others came, other than Mormons, they usually had a pretty rough time getting along.

I recall one time, I think it was late November, when I went over to Lund to make a field examination of a small spring, located about 15 miles out of Lund up in the mountains. The application had been made by the Mormon Bishop, whose name was Gardner. I arrived in Lund, and he took me up to this spring. There was somewhat of a blizzard going and his old Ford truck kept breaking down. We didn't have any food with us. It wasn't until about four o'clock in the afternoon that we returned to Lund.

I had heard about the wonderful meals these Mormon people put out, and I was quite hungry and looking forward to a good meal. When we arrived back at the Bishop's house, we went in. They set the big table, and started bringing the food out. I must have shown my surprise when they came out with two big platters of chicken legs, nothing but chicken legs. I thought to myself that they must have been having chicken and nobody liked the legs so they were held over.

I later found out that they canned the chicken. They could get more in the jars if they put all the legs together and if they put all chicken breasts together, and so forth. On that particular day, they opened up the chicken legs jars, and as I had never liked chicken legs too well, I didn't enjoy that part of the dinner too well. However, the rest of it was fine.

It was quite interesting to learn that the Mormons in those two villages grew everything that they put on the table. They had their own flour mill, and each fall they would bring a miller in from Salt Lake and he would run the mill. So they had their own flour, they butchered their own meat. I presume all they ever purchased was such things as salt and sugar.

I think the most important portion of our early work was in administering the 1925 Stock Watering Act. At that time, there was no bureau of Land Management and a stockman's range area would depend upon his water rights. The 1925 Act was to the effect that no one could water with the intention to graze more than one day at a stock watering spring owned by someone else, or to range within three miles thereof. The law provided that stock could water at these springs when they were trailing, but they couldn't stay. No more than fifty head of any other stockman's cattle or sheep could water at such source. Consequently, by owning the stock watering rights (which were obtained by making application to the State Engineer's office) the stockman was able to develop a range and hold it.

Some of the larger stock people, such as Adams-McGill in the early days, when they first come in—through either land scrip or by purchase—obtained title to many of the springs. However, most of the titles were obtained by making application to the State Engineer for stock watering purposes.

This developed into many fights. There was never an application that came in for a permit to appropriate water for stock watering from a spring or a well without its being protested. When an application was protested, it was always mandatory for the State Engineer to make a field examination, and if it couldn't be settled by a field examination, to hold a

hearing. At these hearings, the State Engineer or his Deputy acted as a hearing officer and on many occasions the contesting parties were represented by counsel.

One hearing that I specifically remember was over in Eureka, and involved a large cattle owner and a Basco sheep owner. Milton Badt, who was one of the leading attorneys in Elko at that time and until recently was one of the Supreme Court justices of the state of Nevada, was representing one of the clients. I forget who the other lawyer was. They wanted the hearing recorded, so I tried to obtain a reporter in Eureka, and learned that a young lady by the name of Miss Morrison could do the job. I engaged her to come up and record the proceedings.

Milton Badt put on quite an argument, taking more than an hour. This was followed by a long presentation by the opposing counsel. During the noon recess the young lady came to me and said, "Mr. Shamberger, this is the first one of these I have ever done, and I am afraid I missed the whole morning's proceedings." Both of the attorneys took it with good nature, and I figured the arguments were made more for the clients than for the benefit of the State Engineer.

Another hearing was held in the same country in which one of the participants was a Basco sheep owner. He was represented by Morley Griswold, who prior to that time was lieutenant governor and acting governor for the state. The Basque couldn't speak any English, so in this particular proceedings Morley Griswold would ask his client a question in English, then he would try to ask it in Basque. The Basque would reply in the Basque language, and then Morley would interpret for the benefit of the reporter. This was rather an unusual situation, and I question if it would be allowed in any court of law.

These stock watering investigations often ended up in fights between the parties, and on some occasions, these fights became quite serious. The participants would start wearing guns. In one instance down in Fish Lake Valley, the sheriff of the county got so concerned that he brought the United States Marshall in to keep peace between the participants.

After the investigation or the hearing, then we would make up our ruling, deciding for either the applicant or the protestor. If either party was dissatisfied, he could appeal to the District Court and from there to the Supreme Court. On many occasions, this was done but very seldom was the State Engineer's decision reversed.

During the first few years, I conducted most of the field investigations and also most of the hearings. Mr. Reppert had taken care of the office work along with Dondero. He also was finishing up the Humboldt River and the Little Humboldt River decrees. By virtue of this work, I think I visited almost every section of the state.

Another case I remember involved Death Valley Scotty. Scotty had been running some wild mules in an area east of Beatty. Some outside stock people had filed on a number of springs in that area, claiming that the range had been abandoned. The hearing was held in Tonopah, and both Mr. Johnson (the man who put up all the money for Scotty) and Scotty himself testified. I remember that in this particular case, we held for the applicant as we felt that the watering of a few wild mules in the area didn't substantiate a range right.

Another of our activities, as I have mentioned, was the adjudication of streams. One of the first adjudications that I took care of was that of Manse Springs in Pahrump Valley. These were some large springs located three or four miles southerly of Pahrump

Springs. They were used to irrigate a couple hundred acres of land. The land itself and water had been purchased by a lady named Miss Kellogg. I remember the first time Miss Kellogg visited the office in Carson City, and she talked to Harry Reppert. When she came in, she was dressed in an old shirt, an old pair of overalls with some slippers that were just about ready to fall off her feet. She told Mr. Reppert that she wanted to buy a ranch. Harry, thinking that she was some kind of a quack and in order to get rid of her, told her there was a nice ranch located around Dayton someplace and the people wanted \$50,000 for it. She said, "Oh, that wouldn't interest me, I want to buy something worth at least \$250,000. I understood later that she was somehow related to the Kellogg of cereal fame.

Miss Kellogg purchased the Manse ranch and wanted the waters adjudicated. I made a couple of investigations and wrote quite a report on the history of the ranch. It seems that some time before, the ranch had been owned by a man by the name of Cazzarang. He had a couple of Mexicans working for him. Right adjacent to the cultivated fields was a wild patch of desert growth inhabited by some wild hogs. The history goes, I know from my investigation, that Cazzarang disappeared, and when they went to investigate they found his boots in the corral. All that was left of Cazzarang were the bones of his feet that were left in his boots. Apparently the Mexicans got in a fight with him, and either killed him or knocked him out and threw him over the fence to the area that the wild hogs ran in.

This southern Nevada area was quite an isolated area, and the springs of Pahrump and Manse played a part in the early history of the travelers through the area. Not too far from Pahrump Valley is an area known as Ash Springs. This is rather wild area with a lot of mesquite and small sand dunes. History tells

us that in the early days it was inhabited by outlaws who wanted to get out of the reach of the law.

On one occasion I passed through the Fish Lake Valley, and stopped at a place to get a drink of water. George Maxey was with me. The old fellow that lived there invited us in for lunch. There was nothing but a dirt floor and when he poured the coffee out, you could smell it a long way off. He asked if I wanted sugar and I said, "Yes." So he brought over a can of sugar. He held a little screen over the coffee and screened the sugar into the coffee. I asked him how come. "Well," he said, "that is to keep the ants out of the coffee."

The Manse Spring adjudication took about two or three years to complete. After the investigation, I made a preliminary order of determination which was protested, and then I prepared a final order of determination which was heard before the District Court in Tonopah. Frank McNamee was the attorney for Miss Kellogg. W. Howard Gray, who for a number of years had been a very prominent attorney in the White Pine and Reno areas, was Deputy Attorney General. The District Court decided in favor of Miss Kellogg and approved our order of determination but it was again appealed to the Supreme Court and was upheld in the Supreme Court. The Manse Spring case became a landmark in Nevada water laws. It brought out the point that the water right was a property right, and couldn't be lost other than by abandonment.

We had a number of adjudications throughout the state. Some of the smaller adjudications were not protested, so they went through in rather rapid order. Many of them were protested and it took as long as two or three years or longer to finally bring to a conclusion.

During this early period, I wanted to become an expert in measuring water, so I

compiled a circular which I titled: "Common Methods of Measuring Water as Practiced in the Western States." In other words, to learn all the various methods of measuring water, I took it upon myself to do a great deal of research and come up with a pamphlet that was understandable by the layman, but which would also be useful to the engineer in the various methods of measuring water. Also in order to get a background of the evolution of the Nevada water law, in 1937 and 1938, I wrote a monograph on the evolution of Nevada water laws, and that was printed in the Biennial Report of the State Engineer in 1938.

In the late '30's, and all through the '40's, we had a number of lawyers in the state who were versed in water law. This was brought about by the fact of the adjudications on the Humboldt and the Little Humboldt River, and also actions on the law involving stock water. The 1925 Stock Watering Act, as well as the 1930 Range Law were the law of the land until the development of the Bureau of Land Management. Even after the BLM first started, only a portion of the state was included within the area supervised by the BLM. In the other portion of the state, mainly in Nye County, Lincoln County, and so forth, the stock watering and grazing areas were still governed by the 1925 Stock Watering Act. When the ELM came in and started to adjudicate the range, they gave a great deal of weight to the stock watering rights of the various stock grazing operators.

It was during this period in the late '30's, that I became quite well acquainted with Senator Key Pittman. He was one of the key figures in the United States Senate at that time, and was Chairman of the Foreign Relations Committee. During the periods that he spent in the state, he would oftentimes come up to the State Engineer's office, lean back and put his feet on the desk and argue water law with

Harry Reppert and myself. I always liked Senator Pittman; not only was he a great Senator, but he was a real fine person.

Also during this period I became acquainted with Jim Scrugham who had been State Engineer and the governor. It was during the period between when he was governor and when he ran for Congress that I knew him best. At that time, he was the editor of a paper in Las Vegas which was separate and apart from the papers produced by Pop Squires, and the Review Journal. It didn't last too long, but Jim Scrugham was always traveling between Las Vegas and Reno. On the least pretext, he would make a trip anywhere over the state to look at a mining claim or mineral outcrop. I have often felt that Scrugham would have made a great Secretary of the Interior. Certainly he was way ahead of the times, and his great value was not too appreciated, I think.

I remember one time taking Jim Scrugham over to the Gold Butte country to look at a mica claim located way up near the top of the mountain. We spent several hours getting there and then we started climbing the mountain and we got about half way up and Jim stopped and said, "Hugh, very interesting. Let's go back." He never did see the mica claim.

Among other things that Jim Scrugham was noted for was his automobile driving habits. He was probably one of the world's worst. Tom Smith, my boss, also liked to get behind the wheel of a car and shoot down the road at ninety miles an hour. I don't think either Tom Smith or Jim trusted each other's driving, so on a couple of trips to Las Vegas I was the fellow who did the driving. Jim Scrugham would sit in the back seat, lean over my shoulders and tell me if I was going too fast or too slow or just how to drive. I never had the pleasure of riding when Jim was driving,

but on many occasions I was scared to death by my old friend Alfred Merritt Smith, as he would try to pass everything on the road.

I should tell something of F. N. Dondero. He started with the State Engineer's office in about 1927 or 1928, when Bob Allen was State Engineer. He has been in that office ever since. I think he will retire in this July. Don has served the state very well, always as an office engineer or a deputy. I don't believe there is anyone who knows as much about the operations over the past forty years than does Dondero.

When I became Assistant State Engineer, we had to find someone to take my place as Deputy. We had had occasion to meet Edmund Muth when he was with the Soil Conservation Service working out of Caliente. At the time of Harry Reppert's death, Ed was located in Yerington, and the position was offered to him, which he accepted. Ed stayed with the office, and after I became State Engineer, I made him Assistant State Engineer. Then when I became Director of the Department of Conservation and Natural Resources, I appointed Ed as State Engineer. Ed served the state well, but in the later years his health was not good and about 1960, he passed away from a heart attack.

When I first knew Ed in Caliente and later in Yerington and later as Deputy, he had great possibilities. Then during the last few years, he had inherited some money from his uncle, and was independently rich. I think this affected his life very much following that. Whether he was worrying about the money or not, I don't know, but he became sickly. It was during this period that there was a lot of trouble over the ground water in Las Vegas Valley, which probably hastened his death.

Having lived in Las Vegas from 1929 to 1933, I knew about the underground water situation. I knew all the wells in the valley,

and I also knew that something would have to be done to regulate drilling and to control the leaking wells. We were of the opinion at that time that many of the old wells drilled in 1907, and 1908, and 1909, were leaking and we had little knowledge as to the extent of the ground water reservoir, or how much the average annual replenishment was. We felt that the ground water basin was receiving water mostly from the snowfall in the higher elevations of the Charleston Mountains, but we had no evidence to that effect. In fact, some of the leading citizens of Las Vegas—including Walter Bracken, who was the manager of the water company in Las Vegas Valley—felt that the water came down from Walker Lake and other areas in the north.

We had no ground water law except some earlier legislation affecting artesian wells. I became quite interested, and in 1938, I wrote the original draft of a ground water act. At that time, William T. Mathews was Chief Deputy Attorney General. Bill took my draft and put it in legal terminology. During the legislative session of 1939, the first comprehensive Ground Water Act in the state of Nevada was passed. Since that time, there have been many amendments made to the Ground Water Act, but I am of the opinion that it is one of the best in the western states. However, with our present knowledge of water basins, I feel that the Act should be further amended to meet conditions as we know now exist.

One of the sections of the Ground Water Act provided that in areas where the State Engineer felt control over ground water development should be exercised, he could designate such an area by township and range. Following such designation, the State Engineer would have complete authority over drilling of wells. The Act provided that anyone drilling a well other than for domestic purposes must first notify the State

Engineer, and at all wells drilled, the log should be furnished to the State Engineer. It further provided that a tax could be exercised against all taxable property in the area for the maintenance of a well supervisor and his operations.

The first thing that was done after the Act was passed was to designate a certain area in the Las Vegas basin, and then the Pahrump basin, as coming under the full provisions of the '39 act. In order to have some supervision in the area, we engaged the services of a old timer there, Harry Jamison. He remained with the State Engineer's office in the Las Vegas Valley for many years until his death in the middle '50's.

In order to determine the condition of the wells in the Las Vegas Valley, we worked out a cooperative program with the United States Geological Survey for a study. I was able to get matching money by going to the Las Vegas Land and Water Company and also the county. The USGS sent one of the top men out, a chap by the name of Pen Livingston, to make a study of the wells in the valley. I was in Las Vegas when Pen arrived, which was in August. He pulled up in his car and parked just in front of the old Wollman Hotel, and went in to see if he could get a room. A few minutes later, on coming out, he found his car boiling water. He told me later that he almost turned around and headed for Texas. This was the first time, he said, that he ever had the car boil water when it was standing still.

In the summer of '39 when the study was carried on, Mr. Livingston, with the aid of Harry Jamison, made an investigation of each of the wells that it was possible to get to. He would cap the well (they were all flowing wells) and drop down a water meter that was small enough to go down. Then by means of earphones he would detect whether or not the wheel of the meter was revolving. If it

was revolving, and with the well capped off at the top, it indicated that water was going out in the surrounding ground. By this method, knowing the diameter of the well and having the water meter calibrated, he could obtain the velocity. Then knowing the diameter, he could determine how much water was leaking out into the surrounding area. Needless to say, he found considerable leakage in all of the older wells. He came up with the recommendation that there should be a comprehensive ground water study made of the whole basin.

Acting on this recommendation, we negotiated a cooperative agreement with the United States Geological Survey to start a comprehensive study of the ground water basins in Las Vegas Valley and Pahrump Valley. We had previously got the County Commissioners of Clark County to put a small assessment on all of the property in the valley to raise money for this purpose. In 1944, USGS sent a young geologist by the name of George Maxey. That is when I first knew him.

The ground water study made in Las Vegas and Pahrump Valleys by George Maxey and Harry Jamison, who was our well supervisor in those valleys, was a very detailed study. It set the stage for the development of ground water from those areas, as well as controlling the well drilling and diversions. The study took about two and one half years. The report which was issued in 1948 by the office of the State Engineer was designated as "Water Resources Bulletin No.5."

Since that time, there have been two or three other detailed studies in the Las Vegas Valley by the USGS and—within the past two or three years—by Dr. George Maxey of the Desert Research Institute. However, the basic figures as to average annual replenishment to the ground water basins in these two valleys has never been changed to any degree in the

subsequent studies. Bulletin No.5 indicated an average annual replenishment to the Las Vegas basin of between 30,000 and 35,000 acre feet; and in the Pahrump basin, 20,000 to 25,000 acre feet.

As a result of the cooperative program with the USGS and Las Vegas basin, the legislature saw fit in the spring of 1945 to provide money for a statewide cooperative ground water program with the U. S. Geological Survey. Mr. T. W. Robinson, a civil engineer and a long time employee of the U. S. Geological Survey headed the state program. The U. S. Geological Survey had been cooperating with the state of Nevada in surface water programs, primarily the measurement of surface water for a number of years. This program also has continued. As a result of the cooperative ground water work started in 1945, the appropriation has continually increased. At this time most of the major and many of the minor valleys of the state have been studied.

I had often indicated to the USGS people, primarily Mr. Robinson, the necessity of starting some reconnaissance ground water programs that would not take too long to complete in order that we could get a statewide picture of our ground water resources. Mr. Tom Robinson would never approve this program, although George Maxey was very much in favor of it, so it wasn't until 1960 that we got the reconnaissance study started.

At that time, the ground water division of the USGS in Washington was headed by Phil La Moreaux. He was one of the best men they have ever had there, and could see the necessity of such a program. Both Alfred Merritt Smith and myself protested to the USGS when Mr. Robinson was heading headed up the state's geological survey, as well as being a professor of geology at the University of Illinois. During much of this time, I had occasion to engage Dr. Maxey to

come to Nevada during the summertimes and do some particular ground water studies that were urgently needed. In about 1961, I had him come out from Illinois to talk at the annual water conference that year. At that time, he met Professor Wendell Mordy, who was quite impressed with Dr. Maxey, and subsequently brought him to the Desert Research Institute.

Alfred Merritt Smith was State Engineer from 1935 to 1951. During that time I served as his Deputy and Assistant State Engineer. We were a great deal like father and son. Tom retired on June 15, 1951, and the following day Governor Charles Russell appointed me State Engineer. At that time, Edmund Muth was acting as Special Deputy State Engineer, carrying on some studies on the surface water of the Humboldt River and its tributaries. I appointed Robert Leighton Assistant State Engineer on August 20. Mr. Leighton wanted to return to the Sierra Pacific Power Company and he resigned after a few months in the State Engineers office. I appointed Edmund Muth as Assistant State Engineer. Elmo DeRicco, raised in White Pine County, was appointed as field and office engineer in July 1950. In February of 1952, he was appointed field Deputy State Engineer. Mr. DeRicco proved very excellent in the position of field engineer as he seemed to have the ability to settle many of the problems between the water users in the field, rather than having to go to a hearing. F. N. Dondero, who had started in the office during the time Robert Allen was State Engineer, about 1926, continued as Deputy State Engineer. On June 30, 1966, he retired.

The ground water picture had been increasing in magnitude in the eyes of the legislators, and, in 1951, they appropriated money for a ground water geologist. At that time we brought in Mr. Herbert Winchester,

who had been working with the Bureau of Reclamation in Utah. He has been serving as underground water hydrologist up to the present time.

On the Humboldt River where a great deal of the State Engineer's problems developed, Archie Millar had resigned, and Mr. George Heenon was appointed as Supervising Water Commissioner. George Heenon served in this capacity until 1957, when he was appointed Assistant State Engineer.

Charlie Thiex was our office accountant and he had served for many, many years in the office of the State Engineer. Charlie was born in Carson City, and was a very able accountant. His wife Alta, who had been serving as stenographer, became my secretary upon my appointment as State Engineer. Charles Thiex died in about 1960, but Alta continued as my secretary.

When I announced that I was going to the Desert Research Institute on January 1, 1965, Alta asked if she could come and be my secretary. She was planning on doing this when without any previous indication, she had a stroke just about January 1, 1965. She passed away on January 20. Much of the success I had as State Engineer and Director of the Department of Conservation and Natural Resources was due to Alta. She was a wonderful person and could do the work of two girls without complaining.

A great deal of legislation pertaining to the natural resources was enacted during the 1950's. In 1951, the legislature by legislative action made the State Engineer responsible for the construction of dams in the state. Up to that time, no authority was given to anyone in the state to approve plans for the construction of primarily small dams. The large ones were constructed by one of the governmental agencies and they needed no supervision. This legislation was quite worthwhile as oftentimes

a great deal of damage could result if one of these small dams went out.

As must be quite evident, during my first fifteen years in the office, our main problem was with the stock-watering applications. Then as the Bureau of Land Management took over the administration of the range rights, the number of applications for stock water purposes fell off rapidly. No sooner had this happened, when the Desert Land entry program started to develop here in the state.

We have in Nevada over fifty valleys that have suitable land for irrigation. Under the Desert Land Law, a person could apply for an entry of 320 acres and his wife could also apply for a 320-acre tract of land. Under an agreement worked out with the Bureau of Land Management, the Desert Land applicant also had to make application to the State Engineer for water to irrigate his land. In all cases, this was ground water. The rush of Desert Land entrymen to the state prevented the State Engineer from handling the development of irrigation in these areas in a normal way.

In all of the eleven western states, except Nevada, only a citizen of the state was allowed to make an application for Desert Land entry. However, back in the early '20's, a law was passed by Congress, initiated by Senator Pittman, excepting Nevada from that provision. So as a result, applications for Desert Land entry started to pour in to the Bureau of Land Management from all over the United States. In fact, most of them came in from Texas and Oklahoma.

When the Nevada State Engineer tried to hold back the granting of any water permits on these lands prior to the approval of the BLM, considerable political pressure developed. In a number of cases, the former Senator from Texas, Lyndon Johnson, inserted himself into the picture, as did Senator Kerr of Oklahoma

and Congressman Aspinall of Colorado, who was the Chairman of the Interior Affairs Committee of the House.

The land laws provided that prior to the time that a person could make application for desert land, an acceptable application for desert land entry, he would have to go over the ground. Some of the promoters in Arizona and New Mexico would bring a plane full of people and fly over the valley without even landing, and that enabled the applicant to say that they had been over the land. The promoters would agree to prepare the application and to file it with the Bureau of Land Management. The applicant would then pay the promoter sometimes as much as ten dollars per acre for doing this. So a great number of promoters, most from out of State, made millions of dollars promoting the Desert Land entry. In most of the cases, the applications were on lands that were unsuitable for irrigation, or where ground water was too deep to be pumped economically.

This splurge of applicants for Desert Land entries filled up most of the valleys of the state. The State Engineer, with the aid of the U. S. Geological Survey, was attempting to get some idea as to the amount of available water that could be pumped from each valley. We also attempted to get some idea of the quality of the land.

I recall when I was State Engineer, and before the actual big rush of Desert Land applications came into being, a number of applications were filed with the BLM for lands in Fish Lake Valley in Esmeralda County. Working with the Soil Conservation Service and the Bureau of Land Management, we decided before any applications would be granted either by the Bureau of Land Management or by the office of State Engineer, we would make a study of the land. We would

also study the amount of water that could be available without depleting the basin. This was done, and permits by the State Engineer were issued in sufficient amount to irrigate 5,000 acres of land, as found suitable for irrigation. Unfortunately, the applicants didn't go through with the development of the land. As a result, many of them gave up the idea of farming.

During the time I was in the office of State Engineer, I had many inquiries from people who would come and visit me to ask where they could find some land that they could farm. In most cases, these people had never done any farming. They were probably retired, and thought it would be very interesting to go out on the desert and develop a farm. I tried to explain to them that in order to develop a farm out of the desert, there were a number of things that they had to qualify for, and that they would have to qualify in order to make a success. One, that they would need at least \$30,000 or \$40,000 in cash, Secondly, they would have to have had experience in farming. Third, they would have to have good land and a good water supply. And fourth, if they were married, they would have to have a wife who would live out with the jackrabbits and the lizards and the wind. If they couldn't meet those qualifications, they would be better off to put their money someplace else.

I remember one occasion, a railroad man who had retired came in and said he had saved up \$30,000, he was sixty-five years of age, and he wanted to develop a farm in the desert. I talked to him, told him what he was up against. About a month later I got a letter from him, thanking me and saying that he had decided to give up the idea. In most cases, the longer you talked to these people and tried to give them some idea of what they were up against, the more determined they were to go out and get a Desert Land entry, try to

develop water and land. In two or three years they would be gone, and their money would also be gone.

One of the best and earliest ground water developments for irrigation occurred in Quinn River Valley in Humboldt County. Here there was good land, and the ground water was not too deep. The main thing was that the people who made Desert Land entries were farmers from the vicinity of Caldwell, Idaho; people who knew how to develop land, how to irrigate, and who had money to do the things that were necessary in developing one of these desert farms. That is, they could take care of the drilling of wells, the fencing of the area to keep the jackrabbits out, the building of a house, and so forth.

In some cases, the Desert Land entrymen, after making a number of applications, would then fade away. As a result of this practice (after I left the office), the State Engineer in connection with King River Valley in Humboldt County issued a great number of permits, much more than the safe yield of the valley would handle. This was done on the assumption that at least fifty percent of the people would go broke before they got anything done, and those who remained would not overuse the ground water resources.

This didn't prove to be the case, because a large land company was financing the individual entrymen with the understanding that after they had obtained patent, then they would sell to the large land owner. This, of course, was strictly in opposition to the land laws, and I understand a suit is pending in connection with this matter on the lands in King River Valley.

However, the State Engineer has relieved the situation somewhat in the late years. That is, in many of these areas that were covered with Desert Land entries, he closed the valleys under the 1939 Ground Water Act, which

meant that before any drilling could be done a permit would have to be issued.

In a valley that had not been designated by the State Engineer under the '39 Ground Water Act, a person could first drill a well and develop his water, and then make application. Of course, he had no assurance that his application would be approved. Once a man spent \$15,000 or \$20,000 putting a well in, though, the tendency of the State Engineer would be to give him a permit. In a designated area, this couldn't be done, so much more control is now being made on ground water development in these valleys than in the early years.

I would like to emphasize this matter of the difficulties faced by the typical Desert Land entryman. In practically every case of a Desert Land applicant obtaining a permit from the Bureau of Land Management for the land, and a permit from the State Engineer to develop ground water, where the person involved was not an experienced farmer he went broke—and probably lost everything he had—in trying to do something he had no business to start in on.

I have seen so many of these people try to develop land. Apparently they were reading some western magazines or something, and thought there was a lot of romance attached. But after the first few months out with the jackrabbits and the desert winds and the dust, they gave up the idea very rapidly. In most cases, they had built a small shack and they had probably fenced around the house and had a well drilled. On many occasions they would try to raise a crop of grain on unfenced land. Then when the grain would get about two or three inches above ground, the rabbits would come in and overnight destroy the crop. This is a pretty hard thing for a person to take, and certainly if they were not properly financed to try again, they would move out

very rapidly, having lost everything they had saved. This is the reason that I, on so many occasions, tried to talk these people out of coming into the state. Most of them were out-of-state people and spent their life savings in trying to reclaim desert land, when they had had no experience whatsoever on farming of any kind.

This was not only limited to elderly people who had retired, but on many occasions young people would come in with a little money and try to do the same thing. I know of no case where a success was made by anyone but a person who had previous experience with irrigation, knew how to develop land and apply the water, and knew what it took in the way of living conditions that they were faced with. Sometimes when a person came in with knowledge of how to farm and experience behind him, and with some money, he was able to stick it out for quite awhile.

I would say that nine out of ten people who obtained a Desert Land entry failed in trying to develop these desert lands. Not only did they have the difficulties of drilling for water, the difficulties of developing land in the desert, but they had—especially in the northern part of the state—the matter of a short irrigation season, so they were limited to only very few types of crops such as grain and hay. Usually these were low-priced crops, and unless they had stock to utilize the feed, they found it very difficult to get by. In general, it can be said that most of them failed. Evidence of what is left can be seen on many of these isolated tracts. The little shack has fallen down, the wind has built sand dunes up around the house and the few pieces of barbed wire strung around. This is what remains of the great expectations of some of these people who apparently were thrilled by the romance of the desert, and tried to overcome the hazards they were facing.

As I mentioned earlier, the outstanding successes in the development of desert land occurred in the Quinn River Valley. There the people who came in from Idaho were actually farmers. In the King River Valley, which lies also in Humboldt Valley, that was backed by a big company. In other valleys, such as Diamond Valley and Reese River Valley, some very fine development work is being done. But whether these will ultimately be successful, I don't know. The short growing season has played havoc with some of the crops. Generally, I would say that the Quinn River Valley, the King River Valley, upper Reese River Valley and Diamond Valley have been the most successful valleys in which desert land development has been done. (There may be some other isolated valleys, but I have been out of touch with what is going on, so couldn't probably give up to date information.)

At the present time, the College of Agriculture of the University of Nevada is developing an experimental farm in the Upper Reese River Valley, not too far from Austin. Here they are going to try to determine the economics of desert land farming, and what kind of crops can be grown that will substantiate development in such a high elevation area as the Reese River Valley. This has just been started, and it may provide some very interesting facts in this regard. No doubt the college will develop information that can be passed on to other prospective farmers as they come in to the state.

I have often mentioned the fact that the Ground Water Act of 1939, with the amendments subsequent to that time, was a good law. Actually it is one of the best laws in the western United States, but nevertheless, it should be amended and brought up to date.

Under this '39 Act, the State Engineer was not supposed to grant permits to appropriate water in excess of the average

annual replenishment to the valley. Now in the Las Vegas Valley this was done purposely. The people were allowed to over-appropriate in order to develop the area so that they would have enough taxable property to support the bond issue to bring water in from Lake Mead. In many of the valleys of the state, there was no supplemental water available. If the area was over-pumped appreciably, the ground water table would keep going down and down, and eventually might make pumping prohibitive for irrigation purposes.

In later years we have obtained a great deal of additional knowledge about these valleys as a result of the ground water reconnaissance work being done by the U. S. Geological Survey. For instance, in the Amargosa Valley in Nye County— and this is a large valley—the USGS has reported that in the first one hundred feet of saturated material there is two million acre feet of water in storage. The top of this saturated material is about ninety feet below ground surface. They also stated that the annual replenishment is in the order of 7,000 acre feet. If the State Engineer was to strictly comply with the water law, and hold the diversions to 7,000 acre feet or thereabouts, only a few people would have farms and you would have within easy pump range, over two million acre feet of water.

Following these facts, it is my opinion that the Ground Water Act should be amended so that a program of orderly over-development could be undertaken with the idea in mind of taking out of storage a certain amount of water over a period of thirty or forty years. I think it is a mistake to try to visualize the situation that may exist thirty to forty years from now, because by that time, no doubt, economics of pumping would be such that a person could pump water from a much greater depth for irrigation purposes than they can now.

Lying below the two million acre feet in the Amargosa Valley, is probably another thousand feet of saturated material. The USGS has reported that within the first hundred feet of saturated material in the state of Nevada, there is over two million acre feet of water in storage, and that the average annual replenishment to our underground reservoirs statewide is in the order of two million acre feet.

During the past ten years, the legislature had added a number of additional duties to the office of State Engineer. He now has the authority to supervise dams in the state. In other words, anyone desiring to put a dam in a stream that exceeds a height of ten feet, or has a storage reservoir of a few acre feet, must file plans for the dam with the State Engineer. He may not start construction until the plans have been given approval. Unfortunately, the legislature made no additional money available to the Engineer, and as this type of engineering on dams is a specialty, it is a little difficult for the State Engineer to adequately pass on plans for dam construction.

In addition to other work of administering water rights and so forth, the State Engineer is ex-officio member of the Columbia Basin Interstate Compact Commission, the California-Nevada Interstate Compact Commission, the Nevada Oil and Gas Conservation Commission and the Nevada State District Bond Commission. The State Engineer is also obligated to cooperate with all the federal agencies, with the Bureau of Reclamation, and the Corps of Engineers.

I have always felt that the job of State Engineer is one of the most difficult jobs in the state of Nevada, or, in fact, in any state. He is always dealing with individuals, and most of the time, these individuals have a gripe of some kind that the State Engineer is called upon to settle.

During the twenty-two years I served in the State Engineer's office, I had occasion in connection with the work to visit practically every section of the state, and to meet most of the people outside of the town either in connection with the stock watering applications or applications for irrigation purposes. It always seemed that the State Engineer's office was never adequately furnished with personnel so that he could keep up in the matter of the applications to appropriate and the adjudication of the vested rights. Nevertheless, I certainly enjoyed those years in the State Engineer's office as it gave me the opportunity not only of seeing the state, but also meeting with so many of the old timers.

STATE AND NATIONAL RECLAMATION AFFAIRS

In the 1946, with Mr. Smith's, State Engineer, approval, I organized a water conference at which time we invited all of the federal and state agencies in any way concerned with waterland resources to make a brief report on their activities. In addition, we had several papers by authorities on the subject of water and land. The Water Conference has continued through the years and just last fall the nineteenth Nevada Annual Water Conference was held in Carson City. During that period, only one year was missed, and that was in 1953. At that time I was president of the Association of Western State Engineers and we had a meeting in Reno in August; and then the National Reclamation Association had a meeting in Reno in October. I felt that it was asking the outside people too much to come in for the Water Conference, in view of the other two meetings.

The Water Conference has done a great deal for the state. It has brought together the federal and state people, and led to a great deal of coordination. In fact, this was the first conference of its kind in the west. Now

several states have followed suit with these annual conferences.

THE COLUMBIA BASIN INTERSTATE COMPACT COMMISSION

Shortly after I became State Engineer in 1951, the Columbia Basin Interstate Compact Commission was set up. About five thousand square miles in the northeastern part of the state is in the Snake River drainage basin and thus in the Columbia River basin. So Nevada was considered as one of the seven states making up the Columbia River basin. Under the law set up, I was chairman of the Nevada Compact Commission, and Governor Russell appointed Alfred Merritt Smith, who had just retired as State Engineer, and M. E. Lundberg of Elko as Commissioners.

Shortly after the Nevada Commission was organized, Mr. Smith resigned and Governor Russell appointed C. H. Jackson, Jr. as a member of the Compact Commission. Mr. Jackson, whom we called Pete, owned a very large ranch in northern Elko. In fact, he

owned ranches in Mexico and California, and had interests throughout the world. He was reported to be one of the wealthiest men in the United States but he was certainly a very common sort of a chap to get along with. On his ranch on the south fork of the Owyhee in Elko County, he has probably spent two million dollars in reclamation work.

Pete Jackson had his own airplane, a Lockheed Lodestar that carried about ten people, and he had a pilot and a copilot. fly means of this plane he could cover the whole United States as well as Canada and Alaska quite easily. Mr. Jackson continued on this Compact Commission until Grant Sawyer became Governor. On most of the trips that we took to the meetings, which were usually held in Portland or Seattle or Spokane, we went in Pete's Lockheed Lodestar. He kept the plane based in Santa Barbara where he had his winter home, and the day before the meeting he would have the plane come up, land in Reno and pick me up, then go up to Elko and pick up Lundberg, and then go up to his ranch for him. On a number of occasions he couldn't go, but he always sent his plane to take Lundberg and myself. On one occasion, my wife and I were the only passengers on the plane to Portland. On another occasion, my son Allan went with me on the plane.

Mel Lundberg was a member of the Interstate Compact Commission, and from Elko. He has for a number of years been one of the leading citizens of the state and served on many commissions and boards for a number of governors. He operated the power company in Elko and was a member of the Prison and Parole Board. Within the last few years, the Elko-Lamoille Power Company was consolidated with the Southern Nevada Power Company, and Mr. Lundberg is carrying on as one of the officials of the Board of Directors of the Nevada Power Company.

He has been active in Republican politics for a great number of years, although he has never sought a public office to the best of my knowledge. He was a very conscientious member of the Compact Commission, and as far as I know never Sent in an expense account to the state. Needless to say, neither did Pete Jackson.

The Commission agreed on a compact and it was signed at quite a ceremony in Portland. Then the executive committee, of which I was a member, went to Washington, D. C., to discuss the compact with the Department of State and the Departments of Interior and Agriculture. On that occasion we had the privilege of meeting with President Eisenhower in his office, where the President gave us about an hour of his time.

I first met General Eisenhower in Las Vegas. During his campaign, he stopped in Las Vegas when I was coming into Las Vegas from Phoenix. I saw all these people around the airport and in the airport, and I didn't realize at that time that General Eisenhower was there. Governor Russell spotted me and said, "Hugh, would you like to meet the General?" I said, "I certainly would." So he took me around a long line of people waiting to shake hands with General Eisenhower, and took me right up in front and introduced me to him. The General was very gracious. Standing next in line and talking to him at the time Governor Russell and I were, was Jim Thorpe, a famous athlete who at that time had a road house between Las Vegas and Henderson.

THE NEVADA OIL AND GAS CONSERVATION COMMISSION

The Nevada Oil and Gas Conservation Commission was authorized by the 1953 Legislature. The membership consisted of

Governor Russell, Vernon Scheid, Dean of the Mackay School of Mines, and myself. Vernon Scheid was elected chairman and Joe Lintz, who was with the Mackay School of Mines, was secretary. I felt that this commission's work was important to the state.

THE NATIONAL RECLAMATION ASSOCIATION

The National Reclamation Association was organized in 1932 to "save reclamation." This was during the Depression, and the reclamation program under the Department of the Interior was almost down to bedrock; nothing was being done. A number of the water leaders of the west got together and organized the National Reclamation Association. George Malone, at that time Nevada State Engineer, was one of the organizers. In 1935, when Mr. Smith became State Engineer, he became director for Nevada and served well in that capacity. Shortly after Smith resigned, I became a director in 1953. During the following years I became very active as chairman of the Water Policy Committee and also as chairman of the Water Law Committee.

For the decade prior to 1960, there had been much litigation concerning federal versus state control of water. A number of bills had been introduced in Congress, the main one being what was known as the Barrett Bill named after Senator Barrett of Wyoming. A number of hearings were held, but it failed to pass.

I am going to discuss some more the federal-state relations in the field of water rights. During the past ten or more years, there have been about fifty bills introduced into the Senate and the House in an attempt to solve the federal-state water right controversy by legislation. Hearings were held on many of

these bills but not one of these bills has even been reported out of committee. This is not caused by lack of support or by minimizing the need for such legislation.

There are a number of reasons which I will touch on. First, perhaps in many of the bills which have been introduced we have tried to develop legislation that was too all-inclusive, that covered too much territory. The Barrett Bill of the Eighty-fourth Congress was a good example. Unquestionably this was good legislation, but it tried to do everything at once. I am often reminded of the statement that former Congressman and Senator Clair Engel of California made at a meeting of the National Association in Lincoln, Nebraska, when he said that we should concentrate on digging one hole at a time; the main thing being to get the first hole dug and to keep the following holes in a straight line.

Another reason was the lack of support from the eastern states to such legislation. The so called "reservation doctrine" that came to the front as a result of the Pelton Dam case had no interest to the eastern and southern states because this applied to public reserve lands.

Third, the general feeling was that the bill involving compliance of federal agencies with state water laws would not be approved by the Department of Justice, and if it passed the Congress it would be vetoed by the President. This was pointed out by Senator Clinton Anderson in a statement he made following one of my appearances before the committee. He said that we could all agree it is important to get something done on it, but heretofore, he recalled, nothing was accomplished. We had a representative come over testifying from the Department of Justice who let it be known that the Department of Justice wanted no part of it. Under these circumstances, there would be very little point in Congress trying

to pass the bill because President Eisenhower would, for obvious reasons, have vetoed it. I think the same general position had been taken by the Attorney General's office in both parties, no matter which party is in control of the government.

It was during the Eighty-sixth Congress that the so called "agency proposal bill" was prepared and apparently agreed to by the various departments, including Justice. The proposal was limited in effect to repealing the "reservation doctrine." Due to lack of support at that time, no hearings were held and no action was taken. I think this was a very grave mistake, because the "reservation doctrine" was one of the key elements that we wanted corrected.

Fourth, it was my thought and also that of many others with whom I talked, that the real reason we never got any bill out on the floor of Congress for vote was due to lack of organized support. In that assumption I was wrong, as I will relate.

Until recently, it was thought that there was very little interest from other parts of the nation for the preservation of water rights acquired under state law, from the threat of navigation servitude and the "reservation doctrine." It appears now that this is not the case, as it was some time ago. As the consumptive use of water of the states of middle west, south and east has increased, these states have begun to realize the impact of navigation servitude on their use of water for future growth and development.

History indicates that during the early development of the west, the issue was whether the control of the use and disposition of the water resources was in the state or the federal government. The issue generally revolved about whether or not the uses by the federal government were governed by state law, or was there a dual set of laws; one

applying to federal government and one applying to the states. The question as to who owns the water and control of such uses came about because the area west of the ninety-eighth meridian, except Texas, was largely acquired by the United States by cession from other countries. Consequently, the federal government became the sole owner of all property rights, subject, of course, to previously existing rights of ownership. This property included water and land resources. The big question, then, is did the states acquire rights therein?

I have previously mentioned the Pelton Dam case. This was a case before the Supreme Court of the United States as the Federal Power Commission versus State of Oregon (1955). The facts of this case are that the Federal Power Commission issued a license over the protest of the state of Oregon to the Portland General Electric Company to build a dam on the Deschutes River in Oregon. The site of the proposed dam was located where one abutment of the dam was on Indian Land, and the other abutment was located on land within a reclamation withdrawal for power purposes. The Federal Power Commission granted the license. The state objected on the grounds that it had the sole power to control the use of the stream, which was non-navigable and located entirely in Oregon.

The case went to the Supreme Court, and the Supreme Court overruled the District Court's opinion and held that the Federal Power Commission could license a private hydroelectric power project on a non-navigable river in Oregon without regard to the law of that state. The court held that because one end of the dam was on Indian land and the other on Reserve land as distinguished from the public domain, the state of Oregon could not use its control over fish to bar the project.

Shortly after the decision of the Pelton Dam case was issued, in fact in a matter of days, the Commandant of the Twelfth Naval District advised me as State Engineer that they were withdrawing their permits to appropriate ground water on the Naval Ammunition Depot at Hawthorne, Nevada, based on the decision of the Pelton Dam case. Sometime prior, the Navy had filed six applications to appropriate ground water from six wells on the Navy reservation close to the town of Hawthorne. Permits were granted, the wells drilled, equipped with pumps, and water was being placed in beneficial use. All that remained for the government to do was to file proofs of beneficial use and to pay the fee of six dollars for the issuance for the six certificates of appropriation and their water rights would then be protected.

The town of Hawthorne, of about fifteen hundred population, was located on the tract of land one mile square with reserve lands of the Naval Ammunition Depot surrounding it on all sides. The town at that time had one certified appropriation from ground water and another permit had been issued which was junior in right to the government wells. It was a well-known fact that the town wells and the government wells were all drawing from a common body of water. Both the town and the Navy had certain water rights from surface streams flowing down from Mt. Grant. The Navy had purchased certain private property and on the streams passing over that property they filed and protected applications under state water law.

At the time they withdrew their ground water permits, they also concerned themselves with certain of the surface water appropriations. They in effect stated that on certain streams that crossed private lands which they purchased, it would protect the water rights. On other streams which

originated on reserved lands that did not cross and private lands, they advised that the state laws did not apply. You will note the differentiation here between water occurring on or passing over purchased private land, and passing over reserved land.

The state of Nevada instituted a suit to obtain a declaratory judgment that the Navy must comply with Nevada's water laws. The Navy claimed that since this ammunition depot is on reserved land, the state laws were inapplicable. The opinion of the Federal District Court was handed down in this case on August 27, 1958. The court dismissed Nevada's complaint and held that the United States need not comply with Nevada law relying on the Pelton case.

The following remarks of the late Judge Jack Ross are interesting and I quote, "Both on reason (and as we shall see in a moment) on authority, this court is forced to the conclusion that there is no mandate in Constitutional, statutory or decisional law that compels the Federal government to bend its knee to this type of state law and regulation, whether it be arbitrary or benign."

When Judge Ross issued this opinion, I was somewhat amazed, because for many years I had been working on water cases with Jack Ross and he had a very fine background on state water laws. While his opinion from a judicial standpoint may be correct, I thought his language was a little severe.

It should also be pointed out that in this case there was no evidence that withdrawal of water by the Navy from ground water storage would endanger the supply of the town of Hawthorne in the immediate future. Conceivably it could have done so in some future time. The state of Nevada appealed this case to the Court of Appeals in the Ninth District, and they issued an opinion upholding the decision of the District Court.

However, in the Court of Appeals decision, the case did not turn on this point, but on the concept that the federal government need not comply with the state law on reserved lands. Presumably, the decision would have been the same if there had been many users and a dwindling water supply. Thus, the decision seems to have established the principle that a federal agency need not comply with an area program to avoid excessive draught of underground storage.

In an address by Ramsey Clark, Assistant United States Attorney General in charge of the Land Division, in December, 1962, he made this statement: "From all the hue and cry arising from this controversy, not one state, not one county, not one municipality, not one irrigation district, not one corporation, not one individual has come forward to plead and prove that the United States exercising alleged proprietary rights in the unappropriated waters of the public domain has destroyed any government powers or any property right. Why? Because it hasn't happened, and this is December, 1962."

Whether or not this is so, I can't answer. In Nevada, federal agencies are generally recognizing state water law; and in fact the cooperation has been excellent. However, the uncertainty exists as to what might happen to water originating on reserved lands such as Forest Reserve Lands that were unappropriated at the time the reservation was created. Would subsequent appropriators be using such waters at the sufferance of the government?

The state of California was quite concerned because a great portion of the water supply of northern California drains from the National Forest lands. In the court's decision in this case as well as in the Arizona vs. California case, the rule seems to be that the government would recognize water rights on streams

originating on Forest Service lands or in any other reserve lands which are obtained prior to the date of reservations. All rights obtained subsequent to when the, say Forest Service area, was created into a National Park, any rights by private people would be junior to the need of the government at any time in the future.

At the 1962 National Reclamation Association convention at Portland, Oregon, a resolution was adopted authorizing the president of the association to form a committee on this problem. I was appointed chairman, and we immediately started to try to build up national support. I sent notices out to many of the national organizations and a meeting was held in Washington, D. C., on June 3, 1963, to organize a Water Law Committee.

The attendance was excellent. The following organizations were represented: Feather River Project Association, National Reclamation Association, United States Chamber of Commerce, the American Farm Bureau Federation, Council of State Governments, Interstate Conference on Water Problems, Southern Water Resources Conference, National Lumber Manufacturers Association, and Colorado River Water Users Association. In addition, both Northcott Ely and Elmer Bennett, long identified with this controversy, were present. Elmer Bennett had begun as solicitor for the Bureau of Reclamation in the Eisenhower administration. Northcott Ely was one of the leading water attorneys in the country with offices in Washington, D. C., and representing the Metropolitan Water District of California and the Colorado River border.

At the meeting in Washington in June, a committee was set up and I was elected chairman. Another meeting was held in September of the same year and other

interested associations attended. Shortly after that, Senate Bill 1275 was introduced by Senator Kuchel of California, to clarify this relationship to the states and the Federal government as to the use of the water of certain streams. The hearing took four days and was one of the best records ever made on this particular problem.

I testified for the National Reclamation Association. In addition to the associations I have named, the National Association of Soil and Water Conservation Districts testified, as well as the National District Attorneys Association. And for the first time, the American Bar Association took a definite stand. The National Association of Attorneys-General testified along with the Municipal Law Officers of the United States and the Mississippi Board of Water Commissioners. Resolutions were submitted approving the legislation by the American National Cattlemen's Association and the Irrigation District Association of California. The Attorney General of California, Stanley Mosk, testified in support of the bill. In fact, we had national support. Every prominent organization in the state of California supported the bill with the exception of Governor Brown.

Now, while we had great support for this bill, what happened was that the Department of Justice along with the Departments of the Army, Interior, and the Navy, the Department of Health, Education, and Welfare all testified in opposition. It seemed that the more strength that we got together to support this legislation, the more strength the opposition got together, and it soon became evident that even if the bill was reported out of committee and approved by the Congress, it would be vetoed by the President.

As I have said, a number of hearings were held in Washington on Senate Bill

1275 and I testified in most of them. I recall, after I testified in 1963, that Senator Clinton Anderson of New Mexico came down and said, "Hugh, when are you going to give up?" He felt that it was rather foolish to proceed with the type of bills as Senate Bill 1275 in view of the opposition at this time. I had been suggesting that we request Congress to set some kind of a review commission similar to the Land Law Review Commission set up during the last session of Congress to delve into the whole history and the laws pertaining to Federal-State water rights.

Senator Kuchel has introduced a new bill in the Eighty-ninth Congress known as Senate Bill 1636. I question very much whether a hearing will be held on this bill although they have amended the bill considerably from Senate Bill 1275 to meet some of the main objections of the executive branch.

To recapitulate, the main opposition to legislation was that it would pass to the state the powers to control the waters in the state, and which would make it mandatory for the agencies of the government to go to the state and obtain permits to use such water, developed first with the Department of Justice. The other departments during the previous hearings on the Barrett Bill were rather lukewarm. Actually, the Department of Interior, through the Bureau of Reclamation in its activities, always complied with the state law. The Forest Service complied with state water law to a certain extent, as did the Indian Service. Apparently due to the strength that was being developed for such legislation, apparently through the Department of Justice and no doubt the Executive Branch, the other departments such as Interior, Agriculture, Army, came out in opposition to the necessity of all government agencies to comply with state water laws.

I served as chairman of the NRA Water Policy Committee for several years. This was

a very active committee, and we developed policies of which many have been adopted by Congress.

I was elected president of the National Reclamation Association in 1963 at Sun Valley, Idaho. I was reelected at the Palm Springs meeting in 1964. At the meeting in Kansas City, Missouri, in 1965, I refused to serve anymore as president, due to the changing status of my position. As president of the NRA, I was required to do considerable traveling. While I was with the state, I had sufficient money for that purpose, but with the Desert Research Institute, the only travel money I had was from the research projects financed by the government.

I didn't have enough to go around. However, I am continuing as Director for Nevada, and as a member of the executive committee. Chances are that I may resign either this fall or the following year as a member of the Board of Directors. At this time I am trying to trim down some of my extra curricular activities.

THE COLORADO RIVER WATER USERS ASSOCIATION

The Colorado River Water Users Association was organized in Las Vegas in January, 1955. At that time there was a big debate going on in Congress and throughout the West in reference to the Mexican Treaty over the waters of the Colorado River which was being negotiated with the Mexican government. The treaty negotiations were being carried on concerning both the Rio Grande River and the Colorado River. Due to the politics and the strength of the Texas Senators, Nevada and California felt the United States was giving Mexico more water than it deserved from the Colorado and not enough from the Rio Grande. The same

feeling was held by many people in Arizona as well in the upper basin states. However, officially, the upper basin states and Arizona were in favor of the treaty that was being negotiated.

The Colorado River Water Association was organized for the purpose of combating or supporting the opposition to the treaty. Alan Bible as Attorney General was the first president, followed by Alfred Merritt Smith.

During the next few years, the meetings were held in Salt Lake City, Phoenix, San Diego, and Las Vegas. Prior to the enactment of the Mexican treaty, these meetings were quite lively. After the Mexican treaty was approved by both countries, the Water Users Association continued on and became more or less of a social affair, with all of the Colorado River States joining in for the two-day meetings. During these meetings outstanding speakers were brought in, and then there would be the big cocktail party and other social functions. After the Compact became a reality, all of the other states seemed to feel that they would like to come to Las Vegas for the annual meeting. The wives especially felt that way, so for the past fifteen years or more, all of the meetings have been held in Las Vegas. Up to his death last year, Jim Shaver always took care of the arrangements and acted as host.

I was elected president of the Colorado River Water Users Association at the San Diego meeting in 1950. Later, Jim Shaver became president and he served for a two year period.

There seems to be no question that the Colorado River Water Users Association will continue with their annual meetings in Las Vegas. It has served a very good purpose in bringing the water leaders of the seven Colorado River basin states together to talk over mutual problems. Since the enactment

of the treaty, the Association has been very careful not to bring up any subjects of controversy between the states.

THE EL DORADO VALLEY

In 1956 and 1957, when I was making the studies in the southern Nevada area as to the amount of water Nevada could use from the Colorado River, I attempted to determine all of the irrigable lands that could be irrigated by the waters of Lake Mead or the Colorado River. One day I was going out towards Boulder City to visit with members of the Bureau of Reclamation, and I happened to think of what was then known as Dry Lake Valley. This is rather a large valley located about twenty miles southerly of Las Vegas on the road from Las Vegas to Searchlight. The city of Boulder City is located at the extreme eastern edge of this valley.

I had never given much thought to this valley, because my thoughts had always been on irrigation use. This particular valley has an elevation of 2300 feet, which meant that you pump to a height of about 1200 feet. Of course, this was out of the question as far as irrigation was concerned; the cost would be too great.

On that particular day, I envisioned that perhaps this valley could be developed into a great industrial area. At that time, a number of industries which had been planning on coming into the Las Vegas area backed out due to the fact that the gambling influence might be detrimental to their employees. This particular valley, Dry Lake Valley, was located far enough from Las Vegas, and there was a low range of mountains separating that valley from the Las Vegas Valley.

I went on to Boulder City and talked to the chief planning engineer, a man by the name of Henry Pelham. I thought he would

perhaps ridicule the idea, but he didn't; in fact, he gave me encouragement. Then I went back in to Las Vegas to see an old friend of mine, Tom Campbell, a leading realtor in the city of Las Vegas, and one of the most prominent business men. Had Tom boo-hoed the idea, I would have forgotten about it, but he didn't. He said, "I have been through that valley many, many times in the past on the way to Needles and southern California, and only thought I had in mind when we came to the valley was how quick I could get through it because it was a very dry area."

In the center of the valley was a very large playa, or dry lake, which contained water only following a cloud burst. Several of the high power transmission lines from Hoover Dam pass through the valley.

When I got back to Carson City I took the matter up with Governor Russell and other members of the Colorado River Commission, and they thought the idea might have merit. At that time I was concerned in getting as much water committed to Nevada as possible, and naturally the irrigation of lands requires more water than any other beneficial use. I went ahead and got the Bureau of Reclamation to make a soil survey of the area and they found some land that was suitable for irrigation. In the "red book" that I will shortly mention, I included several thousand acres of land in this valley. This, of course, would have used a great deal of water if any irrigation was developed, but I knew, and everyone else knew, that irrigation was out for any practical purposes.

My vision of the valley was that if the state could purchase this large area, and then plan a development which would include an industrial city, plant sites, home sites and so forth, that it would be an outlet from Las Vegas Valley. The pumping of water from Lake Mead for industrial and municipal purposes would be practical.

With the approval of Governor Russell and the Colorado River Commission, I prepared a draft of some legislation and took it back to Washington to present it to our Congressional delegation. I met with Senators Bible and Malone and with Congressman Clifton Young and went over the whole plan. They were quite enthusiastic about the plan, and the bill was introduced in both the Senate and the House. It became law on March 6, 1958, as Public Law 85-339.

This law provided that some 126,000 acres of land in this valley, which, by the way, we renamed El Dorado Valley, be withdrawn from the public domain for acquisition by the state of Nevada. Under the Act, the state, acting through the Colorado River Commission, can secure title to the land by purchase. It provided that the state could select the desired lands in units of not less than 10,000 acres upon presentation of a plan for development and payment acceptable to the Secretary of the Interior. It further provided that the land that the state wanted must be selected by March, 1963.

Subsequently, some 16,000 acres were excluded from the land to be obtained by the state, as such lands were either undesirable or were covered with mining claims; to avoid litigation it was felt that such lands should be eliminated.

In 1958, the state legislature enacted a law known as the El Dorado Valley Development Act. It provided for an El Dorado Advisory Group, and this group contained a number of the outstanding citizens of that area. L. R. Douglass of Boulder City was named chairman, A. T. Newell of BMI at Henderson was elected Secretary. Other members were Earl Hartke, at that time mayor of North Las Vegas; Leonard Atkison of Boulder City; State Senator Mahlon Brown of Las Vegas; Norman White, who was chairman of the Clark County

Planning Commission; Harley Harmon, who was chairman of the Board of Clark County Commissioners; Ralph Leigon of the Labor Council; M. J. Christensen, Assemblyman; William B. Byrne, Mayor of Henderson; Edgar Fountain, City Councilman of Las Vegas; and Thomas A. Campbell, realtor of Las Vegas. This group was appointed by Governor Russell. He named me ex-official member of the board. The purpose of the advisory board was to develop plans for and recommendations to the Colorado River Commission.

The Bureau of Land Management completed its appraisal in 1960, and the Bureau of Reclamation made a reconnaissance investigation of the problem of bringing Lake Mead water into El Dorado Valley. Prior to that time, the Colorado River Commission engaged the engineering firm of James Montgomery to make a study as to bring Lake Mead water in. A development and disposal plan as required by the Secretary was prepared and submitted to the Department of Interior.

The Southern Nevada Pumping Project, which is designed to bring water into Las Vegas Valley and into the El Dorado Valley, was authorized by the Congress during the first session of the Eighty-ninth Congress, and plans are now under way for this project. The Colorado River Commission has been working with a number of industrialists and others and it seems very likely that some concrete action will take place within the next few months. I fully expect to see a great deal of industry, as well as homesites, build up in this valley. It is a very desirable location. I hope that when it does develop, they may name an alley after me.

FORT MOJAVE DEVELOPMENT

During the same period when I conceived the idea of a development in El Dorado Valley,

I investigated the Fort Mojave area, in the Big Bend of the Colorado River just below Davis Dam and extending down to the very tip of the state. Two areas of potential farmland lie adjacent to the Colorado River, taking about 3500 acres of river bottom land, about 1600 acres of public domain land which is in a reclamation withdrawal, and 1900 acres in the Fort Mojave Indian Reservation. This land is situated only a few feet above normal level of the water of the Colorado River, and in past years prior to Hoover Dam and Davis Dam, was subject to overflow. Bordering this river front land are large areas of gentle, sloping alluvial fans. The soils on the fans are generally rather sandy, and not well suited for commercial crop production. In our presentation before the Special Master in the Arizona-California litigation, we were able to definitely show that two or three thousand acres of this land would make ideal agricultural land. It was heavily covered with brush such as arrow weed and much of the land was very fertile. In considering this whole area, I came to the realization that this was the only land in Nevada adjacent to the Colorado River that was not within the National Park area, and I felt that here, too, the state should acquire this land.

Following this up, I obtained the approval of Governor Grant Sawyer and the Colorado River Commission to prepare legislation. During the State Legislature of 1959, an act was passed authorizing the Colorado River Commission, on behalf of the state, to acquire and dispose of certain prescribed lands in the Fort Mojave Valley. It provided that plans for development and disposal should be made by the Commission, with the advice of the Department of Conservation and Natural Resources and the Board of County Commissioners.

Here again I prepared some draft legislation similar to the El Dorado legislation and sent it back to our Congressional delegation. This bill was introduced into both the Senate and the House and became Public Law 86-433, which was signed by President Eisenhower on April 22, 1960.

Under this Act, it provided that the area that was included, amounting to some 15,000 acres, had to be purchased all at one time. The Bureau of Land Management went ahead and completed their appraisal, which was rather high as far as the river front lands were concerned and which was later reduced.

During the fall of 1966 an outstanding event occurred in the Fort Mohave area. The Colorado River Commission under the leadership of Ivan P. (Pat) Head, administrator for the Commission, and Governor Grant Sawyer, a deal was consummated with Southern California Edison Company to purchase some land for the state in the Fort Mohave area for the conservation of a very large thermal generating plant which was to cost two hundred million dollars or more. An agreement had been made between the CRC and the company to also purchase 30,000 acre feet of Nevada's allotment of Colorado River water to be used for cooling purposes. This contract to terminate at the end of thirty years. At a ceremony in Las Vegas during the fall of 1966 attended by Secretary of Interior Udall, Governor Sawyer, and many other dignitaries, the exchange of land was made. Clark County and the state will receive millions of dollars in tax benefits during the next few decades. I feel somewhat responsible for this development, as I first conceived the idea of obtaining this land. I am also sure that within the next few years we will see considerable more development in this area as well as in El Dorado Valley.

THE COLORADO RIVER BOUNDARY COMMISSION

The Colorado River, prior to the construction of Hoover Dam and Davis Dam, often changed its course in the area of the Fort Mojave lands. When this area was added to the state in 1866, as I recall the state line was the bed of the Colorado River. The question in connection with the acquisition of the Fort Mojave lands was just where this bed of the Colorado River was, insofar as the river went back and forth over the years during flood periods.

I conceived the idea of an interstate compact commission's establishing the line separating the states of Nevada and Arizona. For a number of years, Arizona and California had been working on the matter of determining the location of the state line in several reaches of the Colorado River below the tip of Nevada, but were having no success.

I talked with some of the leaders in Arizona, principally Wayne M. Akin, who at that time was chairman of the Arizona Interstate Stream Commission, and Obed Lassen, State Land Commissioner. They both thought that it would be very desirable to get the state line established, because quite a bit of land development was under way on the Arizona side of the Colorado River.

Legislation was prepared in both Arizona and Nevada which would create the Colorado River Boundary Commission. The Nevada Legislature of 1959 provided such an act. Within a matter of weeks, the Arizona state legislature enacted legislation setting up a boundary commission in Arizona. Governor Sawyer appointed Ralph Denton of Las Vegas as chairman and A. J. Shaver, who was chief engineer of the Colorado River Commission, a member. He also appointed me as a member. In Arizona, the governor

appointed Wayne M. Akin as Chairman. Ray Church, the Attorney General, was appointed a member, as was Obed M. Lassen, the State Land Commissioner.

The first meeting of the Commission was held at Bullhead City, Arizona, on June 4, 1959. The two commissions reached an agreement on the issues involved, and early in 1960, prepared a compact and enabling acts with accompanying explanatory reports for presentation to the Nevada and Arizona legislatures. Both legislatures passed the acts approving the Compact.

Then Senator Alan Bible and Representative Walter Baring introduced bills into the Senate and the House to get consent of the Congress for the Compact. Favorable action was taken by the Senate on August 1960, but no action was taken by the House in that session. However, favorable action was taken during the Eighty-seventh Congress, and on June 16, 1961, the act giving the consent of Congress to the compact was approved and became law.

These compact commissions were set up early in 1959, and all the work was done in the following few months. In June of 1961, just two years, a compact had been approved. This is probably one of the fastest completed interstate compacts in the history of this country.

WEATHER MODIFICATION RESEARCH PROJECT

During the 1950's, a number of commercial cloud seeding operations were conducted along the upper reaches of the Humboldt River, in hopes that it would produce added precipitation. I had watched these operations very closely. In talking with the farmers, I discovered that some felt that the cloud seeding had caused additional

snowfall and others felt that it wasn't doing any good whatsoever. I thought it might be a good idea if a research project could be started to definitely determine whether or not the snowpack on the headwaters of the Humboldt River could be increased by weather modification procedures.

With the aid of Vincent Schaeffer, who had invented the process of cloud seeding, and Professor Wendell Mordy, I prepared a program that was submitted to the Legislature in 1961. It was enacted into law then. This involved the setting up of a five-year program to be carried out in cooperation with the Desert Research Institute. The Act provided a certain appropriation for the project, but also provided that twenty-five percent of the money spent on any such program must come out of the counties affected. We had determined that it would take at least \$40,000 a year for such a program and the legislature appropriated for the first biennium \$20,000 a year. This meant that we had to raise \$20,000 from other sources.

I visited the counties of Pershing, Humboldt, Lander, Eureka and Elko, and got them to provide donations for this project. Also the Pershing County Irrigation District at Lovelock donated \$2,500 per year for the first three years of the project. I was able to get the Owyhee Irrigation District in Nyssa, Oregon to participate to the extent of \$1,000 per year. These people were interested because the headwaters of the Owyhee River were adjacent to the headwaters of the Humboldt River. We also got the Salmon Falls Irrigation Company, which is located just over the state line in Idaho, to contribute \$500 a year for the first two years. In order to get contributions from some of the local ranchers, Ray Knisley, who is one of the real supporters of this legislation and a state Assemblyman from Pershing County, accompanied me on a trip.

We were able in 1961 to raise \$5,000, and in 1962 to raise \$2,000 from the ranchers.

During the second biennium, namely the years of '64 and '65, I got the legislature to appropriate \$30,000 a year, which meant I only had to raise \$10,000 from other sources. During those two years I asked contributions only from the counties and the irrigation districts. At the last session of the legislature, in 1965, they appropriated \$30,000 for the first year and \$20,000 for the second year, as I felt that would be sufficient to complete the program.

I turned the direction of the program over to Professor Wendell Mordy of the Desert Research Institute, and he in turn contracted with the North American Weather Consultants, headed by Bob Elliott. This work has been progressing since its start in 1961. While the program had really been intended for a five-year program, we found it necessary to extend it into the sixth year, due to the fact that the storm patterns in 1961 and 1962 and in '63 were not suitable for cloud seeding operations.

Following Professor Mordy's development of the atmospheric research group at the Desert Research Institute, and after obtaining money from the National Science Foundation and the Bureau of Reclamation, he has enlarged on the operation. It may be possible that following the completion of the state research project that Professor Mordy will continue with further studies in the Elko region. It is hoped, however, that results will indicate whether or not—and to what extent—added precipitation can be brought about by cloud seeding techniques. We will then know whether or not it would be economical for the ranchers.

Assemblyman Ray Knisley of Pershing County, Lovelock, was one of my greatest supporters during the time that he served in

the Assembly. Ray was very interested in our natural resources and most of the bills that developed in my department were carried through the legislature by the capable hands of Ray Knisley. He was a man who was a protege of Lucky Baldwin. As I traveled about the state with him, he would relate stories about his experiences all over the world. In his connection with the Baldwin family, he got to know all the prominent people in California and it was like reading a storybook to hear him talk about some of the experiences that he had. He was a very able man. I hope under this new apportionment he can get back in, because certainly we need men of this caliber in the state legislature. I predict that he won't get back though.

I found other people along the Humboldt River keenly interested in the research program, not only the weather modification program but other research activity along the Humboldt River. Among these I could mention William Swackhamer, the assemblyman from Lander County, as well as the senator from the county, Rene Lemaire. Wilson McGowan of Pershing County was keenly interested as was Senator Fransway of Humboldt County. Senator Fransway, while very interested, was much more conservative than some of the others. He had to be convinced on most of the issues that we brought before the legislature. Snowy Monroe, the state senator from Elko County, was also extremely interested in these various programs.

I found the County Commissioners of the counties very much interested, but we had a little difficulty in Elko County in connection with their contribution to the weather modification research program. George Ogilvie, County Commissioner, was a very strong supporter, but Mr. Joe Riordan objected. He said that in the wintertime when he goes out to milk the cows, he has to wade in

deep enough snow the way it is, and he didn't want any more snow so he couldn't get out to his barn! Anyway, finally Joe came around, and Elko County contributed substantially to this program.

I might mention also that Ray Knisley, who owned one of the large ranches in lower Lovelock Valley, through his ranch contributed \$1,000 the first year and \$500 the second year. C. J. Pete Jackson, who I mentioned in connection with the Columbia Interstate Compact Commission, also was a large contributor, as was the ranch owned by Bing Crosby.

THE SNOW SURVEY PROGRAM IN NEVADA

The University of Nevada came into prominence in the snow survey techniques on Mt. Rose. In the '20's and '30's, the snow surveys on the Truckee River watershed were handled by the local snow survey organization developed by the Sierra Pacific Power Company. However, of late years, the Soil Conservation Service drew up formal agreements with the Stream Flow Forecast Committee on the Truckee, and has been carrying on the activities over the entire state.

It was my pleasure to have had the opportunity to work with Dr. Church, not directly on snow survey but in connection with the funding of such programs through the office of State Engineer. Dr. Church was a very remarkable man and a very humble man. In later years, I used to find time to visit him at least two or three times in his office in the basement of the old Hatch Building. He liked to sit and talk over the things that he would have liked to do if only money had been available. He traveled all over the world in connection with snow survey techniques, and everywhere he went he made friends for this country. Just last summer I had the

pleasure of participating in a program that was sponsored by the snow survey people, held at the north end of Lake Tahoe where a monument was erected in honor of Dr. Church. I was on the program with a number of others. One of the other chaps was James Shaver. His wife was a niece of Dr. Church's. Jim had just retired from the position of Chief Engineer of the Colorado River Commission, and was looking forward to many happy years in his home at Lake Tahoe with his wife when he was suddenly seized with a heart attack. He passed away just two or three months after the ceremony at Lake Tahoe.

HUMBOLDT RIVER RESEARCH PROGRAM

I had felt for a number of years that some very extensive programs of research should be carried out in certain sections of the Humboldt River. In 1959, the legislature at my request appropriated \$35,000 to the Department of Conservation and Natural Resources to get this program started. I wanted to use all of the facilities available for both state and government agencies so I worked out a very detailed cooperative program. To coordinate that part of the department I assigned George Hardman, my assistant. Agencies that participated in this program were the U. S. Geological Survey, the Desert Research Institute (though Dr. Maxey and his hydrology group), the Soil Conservation Service, the U. S. Weather Bureau, the U. S. Bureau of Reclamation, the Agricultural Research Service, and the Bureau of Land Management.

The project was concerned with collecting data and developing methods and procedures which might be usable or valuable in determining the water resources of the Humboldt River Basin, and in developing programs for the effective utilization. For this

particular study we selected the Winnemucca area between Comas (located about fifteen or twenty miles upstream from Winnemucca) and Rose Creek (located about fifteen miles southerly of Winnemucca)

The legislature in succeeding sessions appropriated additional money for this project. The project is now completed and several very fine publications have been prepared by the U. S. Geological Survey and the Desert Research Institute who were the prime participants. This program was truly a cooperative one. I think that there is no section in the state that has been covered so much in detail, both from the hydrology standpoint and the geological standpoint.

As a result of the Humboldt River Research Project, another survey was taken covering the entire reach of the Humboldt River as well as its tributaries. This was a program carried on by the U. S. Department of Agriculture under provisions of PL 566. Under this act, the Department of Agriculture, acting through the Soil Conservation Service and other agencies of the Department, was also asked to cooperate with the state in river basin surveys. These surveys, which developed information on the land and water resources situations of the entire basins, could perhaps be used to find out specific areas where small watershed projects or other type of projects could be developed.

The Humboldt basin was divided into ten segments and each segment covered separately. In addition to the study of the hydrology, the soil, the type of vegetation, there was also included a historical resume that was prepared by Victor Goodwin of the Forest Service, and who was a member of the U. S. D. A. team. The final report on the segments of the Humboldt River covering the Lovelock region is now in preparation, and also the additional Report Number Eleven,

which will summarize the previous ten reports and cover the entire basin.

This study proved so profitable that in 1964, I carried on some correspondence with the Soil Conservation Committee in California as well as with the U. S. Secretary of Agriculture, with the idea of getting a similar survey started on the Truckee, Carson, and Walker Rivers. Agreements were entered into by Governor Brown of California and Governor Sawyer of Nevada and the U. S. Department of Agriculture for this additional new study on the drainage of the Sierra Nevada range. This study, which is called the Lahonton Basin Study, is now getting started. The same team of people who handled the Humboldt River study have moved from Elko to Carson City and are working on this new survey.

CALIFORNIA AND NEVADA INTERSTATE COMPACT COMMISSION

A number of years ago, I would say about 1953, I discussed with Harvey Banks, who was then state engineer of California, the idea of negotiating a compact on the waters of the Truckee, Carson, and Walker Rivers, and including Lake Tahoe. Harvey Banks agreed that such a compact would be to the best interests of the two states. Accordingly, the 1955 sessions of both legislatures were asked to enact enabling legislation. This was done.

The Nevada State Legislature enacted a statute setting up the California-Nevada Interstate Compact Commission of the state of Nevada. The Act provided that the commission would consist of eight members, that the state engineer should serve in an ex-officio position and that there would be two commissioners from each of the stream systems and one from Lake Tahoe, making a commission of eight members. The state of California passed similar legislation.

Shortly thereafter, Governor Charles Russell appointed William Bliss of Glenbrook to represent Lake Tahoe, B. E. Minister and Norman Brown to represent the Walker River, Fred Settelmeyer and James Johnson to represent the Carson River, and George DeVor and Edward Peckham to represent the Truckee River. The Nevada Commission had its first meeting on September 8, 1955, at which time I was elected Chairman of the Nevada Commission and Edmund Muth, who was the Assistant State Engineer, was named as secretary.

On the California side, Colonel A. M. Barton was named chairman of that group. When the two commissions met, Robert J. Newell, who had been appointed by the Justice Department of the United States to represent the government, was elected chairman, A. M. Barton, vice chairman, and I was named the secretary.

The commissions met regularly, and it looked at first that an agreement could be work out without too much difficulty. After I was appointed as director of the newly-created Department of Conservation and Natural Resources, and I had made Edmund Muth state engineer, he took over my position on the Nevada Commission. Later when Mr. Muth resigned and Elmo De Ricco was appointed state engineer, he became a member of the commission. When I left the office in Nevada to come over to the university, Mr. George Heenon who had been appointed state engineer became the chairman of the Nevada group. Mr. Heenon is still serving in that capacity.

There have been a number of changes in the commission make-up. Mr. William Bliss passed away, and Governor Sawyer appointed his son Will Bliss to represent Lake Tahoe. Bolton Minister passed away, and the people on the Walker River selected his son

to take his place. Norman Brown resigned from the commission because he was also on the Nevada Tax Commission as well as the Gambling Board and felt he couldn't give the time. Fred Settelmeyer resigned due to the fact that he was a State Senator from Douglas County and James Johnson resigned because he had been acting as a legal representative for the commission and also serving as commission member. He was advised that he couldn't handle both positions so he resigned from the commission and is still retained as the legal representative. He was replaced by Phil Hibbel who was the manager of the Truckee-Carson Irrigation District of Fallon. George DeVor was asked to resign by Governor Sawyer due to internal conflict within the commission, and he was replaced by Fred Fletcher, at that time president of the Sierra Pacific Power Company.

Within the past few months the two commissions have duly signed a proposed compact. The cities of Reno and Sparks as well as Washoe County have made serious objections to the provisions of the Compact, and it is quite possible that the United States Government, primarily the U. S. Bureau of Indian Affairs, will find objections from the federal standpoint.

At this time it appears to me that unless some radical changes are made in the Compact the legislatures of the respective states will not approve the Compact, and neither will Congress.

LAS VEGAS GROUND WATER SITUATION

In 1959, and 1960 the ground water situation in Las Vegas was becoming quite critical. A number of the large hotels wanted to put in golf courses. The state engineer was trying to hold down the pumpage of ground water in the Las Vegas basin as much as

possible as the basin was being greatly over pumped at the time. Some fear was expressed as to how much the basin would stand.

Hank Greenspun, editor of the Las Vegas Sun, along with others, tried to develop a country club out in the Paradise Valley area of Las Vegas and wanted to pump ground water to maintain the greens. Mr. Muth, the State Engineer, would not let Greenspun develop wells in the area in Paradise Valley where good wells were being produced, but did tell him he could develop some wells in the area in which his golf course was located. Greenspun did put down a couple of wells, but they were not very good and the water was poor. He started taking the office of state engineer apart, because he couldn't understand why if others could pump from the ground water he couldn't.

At that time the water from the Clark County sewage plant and the city sewage plant from Las Vegas Wash was running to waste down Las Vegas Wash. This was good effluent, and finally Mr. Greenspun made an arrangement with the county and the city to pump this water over to his golf course. Mr. Greenspun still maintained his critical position of the office of state engineer, and when Major Riddle, the owner of the Dunes Hotel, wanted to put in a golf course and it looked like the state engineer was going to grant him a permit, Greenspun became very bitter. Mr. Muth, however, refused to grant Riddle's permit at that time.

Riddle, who was a very close friend of Governor Sawyer, kept after the Governor to make the State Engineer grant permits for the golf course. I recall very vividly one day while I was attending a meeting in Portland, I had a call from Governor Sawyer telling me that something had to be done, that he had to get Major Riddle satisfied some way.

Prior to this time, the special study of the ground water basin was made by the

firm of Leeds, Hill and Jewett, and carried out by Harvey Banks, who at that time was vice president of the consulting firm. Their report recommended the creation of a ground water board in Las Vegas Valley for the State Engineer to work with in connection with the granting of permits. The legislature immediately following the report set up such a ground water board. The initial board consisted of George Monahan, who was county engineer of Clark County; Boyd Bullock, representing North Las Vegas; Miss Helen Herr, representing Las Vegas; Leonard R. Fayle, representing Las Vegas Valley Water District; Fred B. Allen, representing Las Vegas; Lewis R. Douglass, representing Clark County; and Donal O'Callaghan, representing Henderson. Mr. Monahan was made chairman of the board.

When the Governor called me up, I called George Monahan from Portland and told him to call a meeting of his board and see what they could come up with insofar as they had previously recommended denial of Riddle's applications. Some years later when *The Green Felt Jungle* was written, there was some reference in the book made of my conversation with George Monahan. The book reported me saying, "Do something to get Major off the Governor's back." I forget exactly what I did say, but it was along those lines. It finally worked out that the Dunes was granted some reduced permits to appropriate ground water.

Shortly following this, the State Engineer engaged the Desert Research Institute under George Maxey to come in and make a detailed study and also to develop an analog of the Las Vegas Basin. As a result of Dr. Maxey's study it was developed that the basin wasn't in nearly as critical condition as had previously been thought; and that additional appropriations could be made, provided the wells were

properly located. This was more or less a go ahead signal for other development of wells. So additional golf courses were put in as well as additional hotels. Now, of course, with the Bureau of Reclamation Southern Nevada Pumping Project getting started within three or four years, sufficient water can be brought in from Lake Mead to ease the situation in the Las Vegas Basin.

However, things continued to be very hot in the Las Vegas area, especially in connection with the North Las Vegas operations. North Las Vegas had a city manager named Clay Lynch. He was a very aggressive man and a very good promoter, and he set out to enlarge the city limits of North Las Vegas to try to compete with Las Vegas for industry. As a result he made application for a number of wells for additional water in that area. This, of course, caused a number of protests from other well owners because in that particular area, the ground water development was quite limited. This was indicated by Dr. Maxey's report, as well as by the analog studies.

I believe the addition of the analog as an aid in administering the Ground Water Act in Las Vegas Valley was the biggest single element which helped to straighten out the serious situation. By using the analog, it could be determined what the effect that any new well would have on surrounding wells over any period of time. So starting about two years ago, every application to the State Engineer for the drilling of a new well is first analyzed by the analog and then the results are sent to the State Engineer and the Ground Water Board. The Ground Water Board recommends its action based on the results of the analog operation. This has enabled the State Engineer to better regulate the location of a well and bring about optimum utilization of the waters of the basin without too much interference. I give great credit to the work that was done by the Desert

Research Institute under the supervision of Dr. Maxey in connection with the ground water situation in the Las Vegas Valley.

The trouble that developed in the Las Vegas Valley over the years ultimately resulted in Mr. Muth resigning from the office of State Engineer. Ed Muth was a brilliant man, a good engineer, but a very poor public relations man. The situation at Las Vegas in connection with the ground water was considerable different from administering the decreed water from a stream where the water was visible. Ed made up his mind that he wouldn't grant any permits for golf courses and that he wouldn't grant North Las Vegas any permits for new wells. Of course, this all came back to me, and the governor also was put definitely right under the gun.

I recall one occasion when the city of North Las Vegas was without water for several hours right during the heat of the summer. There was an old well out on the highway toward Nellis Air Force Base that Clay Lynch wanted to use in emergency situations, without obtaining a permit to pump from that well. The procedure in obtaining a well took usually sixty or ninety days, and Clay Lynch said that the city of North Las Vegas had to have water immediately or a portion of the town would be without water on and off all of the summertime. This, of course, represented a big fire hazard, so he asked for permission to put a pump on that well to connect into the North Las Vegas system without a permit. Ed Muth refused to let Lynch do this, and at that time I had to take a hand.

I went down to Las Vegas, had a meeting with the city council, overruled Mr. Muth's action, and let them put the pump on this particular well. Whether or not Clay Lynch was pulling a fast one, I don't know, but in any event, everybody was in an uproar in Las Vegas Valley over the situation that was being brought

about by the lack of water. This was the final straw as far as Governor Sawyer was concerned and he told me that Ed would have to go.

I had had some trouble with Ed over the last two or three years prior to that time, but I realized his effectiveness in many areas of the state as far as the work of the State Engineer was concerned. I probably had occasion to let him go a number of times but I always held back because, actually, he was somewhat of a sick man at that time. In any event, when the governor laid the law down, there was nothing I could do but call Ed Muth in and talk it over with him. As a result, he resigned.

I didn't fire him but I told him that I thought it would be good if he resigned because the governor had told me that he had to go. Prior to this time Ed had had some heart trouble and it was only a year or two after he resigned that he passed away from the effects of a heart attack. I always felt that he had the capability of being a very great State Engineer had he only had the ability to work with people which is so necessary in that office.

I have never read *The Green Felt Jungle* in detail. Most of the information was obtained through Hank Greenspun and his paper, and it is quite biased. He gave some implications that perhaps a deal had been made here and there, but never came out and made any specific charges. However, I know that Mr. Muth tried to carry on the work of the State Engineer's office as he saw fit. Whether or not any offers were made to him I don't know; but I do know that certainly they would not have been accepted. In all the years I have been in state government, no one has ever made an offer to me to do something that I shouldn't have done. You hear about these things, but to my knowledge, no one in the State Engineer's office or in the Department of Conservation were ever pushed by outside interests to do something which was contrary to the law and policies of the office.

THE COLORADO RIVER LITIGATION

On August 13, 1952, Arizona filed a motion for leave to file a bill of complaint in the Supreme Court of the United States against the state of California and seven public agencies. These agencies were: the Palo Verde Irrigation District, the Imperial Irrigation District, Coachella Valley County Water District, Metropolitan Water District of southern California, the City of Los Angeles, the City of San Diego, and County of San Diego. This was the start of the longest trial of its kind ever before the Supreme Court of the United States.

I had the privilege of working with the attorneys representing the Colorado River Commission of Nevada and the state from the inception of the suit to the final conclusion in 1963. The record of this action is another chapter in the long history of controversy relating to the Colorado River. Four times previously, starting in 1932, Arizona had tried to get before the Supreme Court of the United States, but in each case the Supreme Court turned them down.

The complaint filed invoked the original jurisdiction of the court under Article III, Section Two, Clause Two of the Constitution. The complaint alleged that pursuant to the Colorado River Compact and the Boulder Canyon Project, Arizona was entitled annually to a certain quantity of water from the Colorado River system. Arizona requested that her title to the annual beneficial consumptive use of 3,800,000 acre feet from the Colorado River system be forever confirmed, and that California rights to the annual beneficial consumptive use of 4,400,000 acre feet be forever fixed.

Prior to 1920, California made attempts in Congress for the construction of a dam on the Colorado River primarily for the purpose of holding back the flood water that had theretofore caused millions and millions of dollars of destruction in the Imperial Valley. The upper basin states, that is, the basin states of Wyoming, Colorado, Utah and New Mexico, were fearful that if the dam was put in without determining the rights of the

upper basin, they would lose those rights, because southern California was developing much more rapidly than the upper basin states. Under the theory of “first in time, first in right” they would not have any water available for their future needs. They made every effort to prevent any constructions works whatsoever on the Colorado River until a division of the waters had been determined.

In 1922, a compact between the states was signed at Santa Fe, New Mexico. This compact divided the Colorado River between the upper basin states and the lower basin states, with Lee Ferry being the dividing point. Following the compact, California renewed its efforts to get a dam provided for by Congress, and there came into being a number of bills over the next few years known as the Swing-Johnson bills. Phil Swing was a congressman from the Imperial Valley area and Hiram Johnson was one of the famous senators from California. All efforts failed until 1928, when the fourth Swing-Johnson was passed by Congress and enacted into law. This became known as the Boulder Canyon Project Act.

The Boulder Canyon Act resulted in the construction of the dam at Black Canyon. This was first called Hoover Dam and then changed by President Roosevelt to Boulder Dam. Finally, it was changed back by President Truman to Hoover Dam, which will no doubt be its permanent name.

The bitterness between California and Arizona grew during the following years, with Arizona feeling that the 2,800,000 acre feet of water was not enough for her needs. She also wanted the waters of the Gila River. Nevada, which was more or less in between, tried to act as an arbitrator between California and Arizona on a number of occasions. Nevada's efforts were headed by Governor Carville. The bitterness grew to such an extent that neither state trusted the other.

The Nevada legislature authorized and directed the Attorney General to intervene in the suit. The legislation also authorized the Colorado River Commission to obtain the assistance of the State Engineer. Prior to that, and on December 31, 1952, the United States filed a motion to intervene. Nevada filed its motion on December 14, 1953. This was granted on June 1, 1954. In July of 1954, California filed a motion to join Colorado, New Mexico, Utah and Wyoming as upper basin states in the suit. On about June first, the Supreme Court appointed the Honorable George I. Haight of Chicago, Illinois, as special master.

Mr. Haight had previously been a judge in Illinois. He was an elderly man and a very fine man to talk to. I had occasion to make a number of trips with him, along with others. He used to talk about the early days when he was a young attorney. The firm he was working for sent him out to Silver Peak, in Esmeralda County, on a mining suit and he spent several months in Nevada. He liked Nevada, and we felt that we had a friend in Judge Haight.

Judge Haight called a pre-trial conference between the litigants to be held in Phoenix, -Arizona, in August of 1954. I attended this, along with William Mathews, who was Nevada's counsel, and William Kane, now deceased but at that time an attorney in Reno.

I remember Judge Haight speaking from the stand and talking to the group, stating that if the California attorney saw him eating dinner with the Arizona people, not to be alarmed because he would be glad to have dinner with the California group if they would ask him. He was a very homey sort of a man, but had never had too much experience in water matters.

The Colorado River Commission met in June of 1953 at Henderson, Nevada. At that

time, Governor Russell was acting as chairman of the Commission and Alan Bible was acting as attorney for the Commission. There the matter of the litigation was discussed. I was invited to attend this meeting by Governor Russell. I told the Commission that I thought before they filed the motion to intervene, they should make some effort to find out how much water Nevada could place to beneficial use from the Colorado River. Al Cahlan, who at that time was the editor of the Las Vegas Review Journal and a member of the Commission, said, "Why not let Shamberger make this determination? He knows as much about it—or probably more—than anybody else."

I informed the Commission that I would be glad to make a reconnaissance study, but explained to them that my time was fully taken up carrying out the duties of the State Engineer's office, and I wouldn't want to take on any long time obligations. They agreed, and I went ahead and made a reconnaissance study and submitted it to the Commission about the middle of September, 1953. The Commission then asked me to put it in more final form and I spent several additional months working out maps and charts and so forth.

On May 31, 1954, I submitted my report, which became known as the "red book" ("Present and Potential Use of the Waters of the Colorado River and Tributaries Within Nevada, Together with Related Matters"). I indicated in this report that Nevada could make beneficial use of about 539,000 acre feet.

Considerable discussion was being carried on between the litigants as to the place where the trial would be held. Harry Horton, one of the leading attorneys for California and the attorney for the Imperial Irrigation District, wanted to hold the hearings or the trial in Carson City. Judge Haight gave notice

of a pre-trial conference for Carson City on October 12, 1955. However, just a few days previous to that time, on September 30, Judge Haight died. Shortly thereafter, the Supreme Court appointed Simon H. Rifkind as special master.

Simon Rifkind was a member of a large law firm in New York City, in fact, the same law firm that Adlai Stevenson became associated with. He was noted trial lawyer. He was a Russian Jew. Everyone agreed after sitting with him on the trial for a few months that he was a very brilliant man. He knew nothing whatsoever about water, but he was one of these individuals that apparently could retain in his mind all of the important facts and not retain the testimony that didn't really count.

Rifkind was just the opposite of Judge Haight in personality. While Judge Haight was a friendly person and liked to talk with everyone, Judge Rifkind never mixed with any of the counsel. In the several years that Judge Rifkind was on the case, I know of no occasion where he ever socialized with any of the representatives of the states.

Judge Rifkind, on the following January, in 1956, called an organizational meeting at his offices in New York City. I was in Washington, D. C., the week previous, so I told our counsel that I would go up from Washington and attend this meeting. Bill Matthews and Bill Kane were to fly back and be there on the morning of January thirtieth. I arrived at the place of meeting but Bill Mathews and Bill Kane didn't arrive. The judge called the meeting to order and he started asking all of the counsel if they were ready. When it came to Nevada, I said, "Nevada is ready," and everybody laughed because they all knew that I was an engineer and not a lawyer. It happened that due to a storm in Reno, Mathews and Kane couldn't get out in time,

and they flew across the country on the day we met in New York.

The meeting in New York was supposedly for a two-day get-together, but it so happened that everything was concluded by about two o'clock in the afternoon. That evening, I went down to the hotel where they were to stay and here came Matthews and Kane. When I told them the thing was all over, old Bill Mathews really blew his stack. He said, "Why couldn't they wait for Nevada?" I said, "Well, Bill, why don't you stick around some more and go to the top of the Empire State Building?" (He had never been in New York before) "and we can go down and visit with the California group." But that didn't suit Bill. He immediately got reservations to return to Reno early the next morning, so they only stayed over night in New York.

At this meeting in New York City, Arizona again made objections to having Carson City as the place to hold the trial. I think the main reason was that some of Arizona's counsel didn't want to fly the DC-3 from Phoenix up to Reno. It ended up with everyone agreeing on San Francisco, and on April 9, and 13, 1956, we met in the courthouse at Seventh and Mission for a pretrial conference.

On June 14, 1956, the actual trial started. Arizona, being the plaintiff, started first. They extended their case through the following months. Arizona apparently was represented by counsel that had never had any experience in a big trial, and they put on their case in a very sloppy manner. They entered a number of exhibits, but with most of them, especially the maps, they only had one for the court and didn't have any to pass around. The following winter when the defendants appeared, California put on her case first. She was followed by the United States, and then by Nevada, New Mexico, and Utah who were the Lower Basin States. The trial itself was concluded on August 28, 1958.

Mr. Mathews was the Attorney General for the State of Nevada during the early stages. Associated with him were William Kane, whom I have mentioned, and Alan Bible. Bill Kane died in the latter part of 1956, and with his death we lost a very fine friend as well as an able attorney. On January 1, 1955, Harvey Dickerson became Attorney General and he retained Bill Mathews as chief counsel. Also to associate with him, Attorney General Dickerson appointed Homer Angelo, an attorney of Carson City, and John Shaw Field, an attorney of Reno, as additional counsel.

When the trial started in San Francisco, I was asked by Governor Russell and counsel to serve as consultant to the Colorado River Commission in respect to this litigation. I set up an office and living quarters in an apartment on Geary Street which I retained for the three years that the trial went on.

During the first few months of the trial and after watching California put on its case (it was done in a wonderful manner), I became convinced that Nevada needed additional counsel, and especially trial counsel. Mr. Mathews, a very able Attorney General and a very able water lawyer, was getting old and hard of hearing. I put the matter up to Harvey Dickerson, the Attorney General. Harvey said he would employ additional counsel. I told him that we would need someone who was a good water attorney and also someone who could put most of his time on this case.

At that time there were some good water attorneys in Nevada, but most of them were in either offices by themselves or had just one associate and were not able to give the proper attention to the case. I had had some previous experience with an attorney from Twin Falls, Idaho, a man named Pat Parry. He was the head of a large law firm in Twin Falls, known as Parry, Robinson and Daly. Pat Parry was the attorney for the Idaho Power Company in the

case before the Federal Power Commission relating to the Hell's Canyon Dam on the Snake River. I had worked with him on a case in northern Nevada on the water rights of the Salmon Falls Creek, and I was very much impressed with his ability, not only as a lawyer but as an arbitrator.

With Dickerson's permission I made a trip to Twin Falls and put the matter up to Mr. Parry. A couple of weeks later he came down to Carson City to talk with Harvey Dickerson and Bill Mathews. It resulted in the state retaining the firm. Mr. Parry was given the assignment as trial lawyer, and also the responsibility of working up all of the briefs and other documents that had to be filed. Fortunately, Mr. Parry had an associate in his law firm, a man by the name of Cliff Fix. Fix had spent a great number of years acting as solicitor for the Department of the Interior. In fact, Mr. Fix was listed with the Department of the Interior when the second water contract was signed by the Colorado River Commission and the Secretary of the Interior, and also when the Arizona water contracts were signed.

Over the months I worked very closely with Mr. Parry and Fix, and all of the briefs were prepared in my office in Carson City.

Nevada's case was particularly difficult because at that time our use of water from Lake Mead in gross divisions amounted to a little over 24,000 acre feet and we were asking for 554,000 acre feet. We were attempting to substantiate a consumptive use, that is, divisions less return flow, as of the year 2000 of 554,000 acre feet. To do this, we were showing gross divisions of 786,000 acre feet with return flows of 232,000 acre feet. Nevada placed in evidence exhibits and testimony that the population in Clark County in the year 2000 would be 600,000 people. As I view this matter now, I think we were about one million people under what it is actually going to be.

California, in 1956, was placing into beneficial consumptive use 4,596,000 acre feet. Arizona was placing to beneficial consumptive use from the Colorado River of at least 555,000 acre feet. The constructed works of the diversion in California were capable of diverting in excess of the 5,361,000 acre feet asked for, and in Arizona over 1,000,000 acre feet.

I think our concern was understandable, because here we have California's works of diversion capable of diverting over 5,000,000 acre feet, and Arizona's of diverting over 1,000,000 acre feet, and Nevada diverting only 24,000 acre feet.

The staggering dimensions of this case can best be gained by reference to a few statistics. It took 132 days over a three-year period to try the case. It took 22,593 pages of testimony bound in forty-three separate volumes, each about two inches thick. Approximately 4,000 exhibits were offered. Thirty-five attorneys took part in the trial. Testimony was given by 106 technical and scientific experts.

Near the close of the trial, Judge Rifkind made this statement, "The results of the work we have done will inevitably affect the future of a great empire, the southwest states of the Union and the stream of law which governs the Colorado River and its tributaries. To have had a share in the history of this region as it is developing, and indeed as it is really exploding, into great prominence as one of the principle centers of activity in the United States."

Nevada put its case on starting in May of 1958. Our case took seven days and I was the first witness called. I testified on five different occasions. Other witnesses from Nevada were Clyde E. Houston, an engineer with the Soil Conservation Service; George Hardman, who at that time was one of an assistant in the Department of Conservation and Natural

Resources, and prior to 1957, State Director of the Soil Conservation Service; A. J. Shaver, engineer of the Colorado River Commission; James M. Montgomery, who had a large engineering consultant firm in Pasadena; and Robert Julian Moore of Las Vegas. George B. Maxey, who at that time was with the University of Illinois and the state of Illinois, testified for Nevada, as did Vernon E. Scheid, Dean of the Mackay School of Mines.

During the course of the trial, Nevada had engaged a large engineering firm in New York, known as Tippetts, Abbott, McCarthy & Stratton. They sent one of their top engineers, John B. Drisko, and an economist, Eric D. Dodge. Both of these men testified. In addition, Senator George W. Malone testified as did Mr. McCarthy, one of the members of the engineering firm in New York City.

Mr. Drisko and Dodge had spent considerable time in southern Nevada, but unfortunately, when they got on the stand they got a little confused. Mr. Parry, who was a trial counsel, immediately telephoned Mr. McCarthy in New York City and told him to grab a plane and get out there immediately, which he did. His testimony on the last day of the trial helped us a great deal.

All during the period of the time I was associated with the Colorado River Commission I had had a number of conferences with Molly Malone, who was Senator at that time. Molly was of the opinion that we should ask for more than a million acre feet. He made it known that he wanted to testify in this case. Mr. Parry, realizing and knowing something about Molly Malone, got him to come out a couple of days early, and together they worked up the testimony. Mr. Parry had a hard time keeping Molly from going out on a limb. I recall when Molly came into the courtroom and was called up to testify, he walked up and stepped over

to the bench and shook hands with Judge Rifkind, and said "You know, Judge, I walk to work every morning with one of the Supreme Court Justices. Anytime you are back in Washington, come and see me." Anyway, we got through with Molly without causing any great eruption, which is quite a compliment to Pat Parry.

Mr. Mathews wanted to carry on some of the trial work, but we tried to talk him out of it as much as possible due to his lack of hearing. When he did get up, though, he called all of the others "Brother this" and "Brother that." One time, when someone else was testifying, and Hub Moore (during the early phases of the trial chief counsel for Arizona) was up making some kind of objection. Bill turned to me and apparently didn't have his hearing aid on, because in a loud voice he said, "I wish that old son of a b—— would shut up."

In 1959, Roger Foley became Attorney General, and also became an admirer of Pat Parry. Following the conclusion of the trial, the states had to file a number of briefs, and these were all prepared in my office and in the Holiday Hotel in Reno where Mr. Parry set up his office. The final briefs were filed on June 30, 1959. The matter then was before the Special Master.

On May 9, 1960, Judge Rifkind submitted his draft report. The document consisted of 387 pages, and he requested comments by all parties by June 10. In his suggested decree he allowed Arizona 2,800,000 acre feet, California 4,400,000 and Nevada 300,000 acre feet, if there were available 7,500,000 acre feet of water. In addition to the uses by the Lower Basin states of the Colorado River, under the Mexican treaty the United States had to deliver to Mexico each year at least 1,500,000 acre feet of water. It was realized that there would never be available for the Lower

Basin states—based on over forty years of records—more than 6,270,000 acre feet. The Special Master also provided in his proposed decree that Arizona would have the full use of its tributaries, primarily the Gila and the Big Williams, and that Nevada would have full use of the waters of the Virgin River. This meant that our uses on the Virgin River didn't count against the 300,000 acre feet suggested for Nevada and that the 300,000 acre feet was consumptive use (diversion less return flow).

In his draft report, the Master said, "I have concluded that the claims of Arizona, California, and Nevada to allocation of water from Lake Mead and from the main stream of the Colorado River below Hoover Dam are governed by the Boulder Canyon Project Act, the California Limitation Act, and the several water delivery contracts which the Secretary of the Interior has made pursuant to the authority of the Project Act. The Colorado River Compact, the doctrine of equitable apportionment and the law of appropriation are all irrelevant to the allocation of such water among the three states."

In concluding that the compact, the doctrine of equitable apportionment and the law of appropriation were irrelevant, it was my opinion that the Special Master arrived at the conclusion which, if sustained by the court, will write a new chapter in the water law of the west. This effect may well be that the dominant control of water in interstate streams could become vested in the United States.

In August, 1960, oral arguments were held in one of the old court buildings in New York City. Only Mr. Parry and myself made this trip, as Mr. Mathews was not feeling too well at that time.

In preparing briefs following the conclusion of the trial, Nevada counsel felt it would be important to present figures of

the amount of water that will be available for diversion among the parties. It was axiomatic, in view of the evidence presented during the trial, that there was not enough water to satisfy all of the claims of all the parties to this action. To assist in this study, and at the request of the Attorney General, I employed Mr. E. B. Debler, a consulting engineer of Colorado. Mr. Debler was one of the best known hydrologists in the west, and had spent many years as Chief Hydrologist for the Bureau of Reclamation. Following this, Mr. Debler spent a great deal of time in my office, and along with George Hardman and myself, prepared the facts and figures that were used by Nevada's counsel in presenting their briefs.

On December 5, 1960, the Special Master presented his report to the Supreme Court. Shortly thereafter, the Supreme Court notified all parties that opening briefs must be filed by May 22, 1961, answering briefs by August 14, and reply briefs by October 2, 1961. All arguments were presented before the court on January 8, and later the court asked for further oral arguments to be held on November 13. I attended both of these arguments before the Supreme Court in Washington, D. C. In fact, I also attended the arguments that developed following California's entering a plea to the Upper Basin states. Altogether I sat through three of these hearings before the Supreme Court of the United States.

On June 3, 1963, the Supreme Court submitted its opinion. In general, it followed the recommendation of Judge Rifkind, the Special Master. However, the court's opinion was not unanimous. Justice Douglas filed what has been termed one of the most bitter dissents ever delivered by a Justice to his associates. He said, "The decision today resulting in the confusion between the problem of priority of water rights and the public power problem has made the

dream of Federal bureaucracy come true by granting it for the first time the life and death power by dispensation of water rights long administered according to state law.”

In the decision of the Supreme Court and supporting the Special Master’s report, it was ruled that the United States had paramount right to the use of the quantity of water needed for the federal establishments, including certain Indian reservations and wildlife refuges. Such uses would be charged to the allocations where the use will occur. Under the rules laid down, the United States had the power to reserve water for the benefit of an Indian reservation created out of public lands, and such a reservation of water rights created a water right good against subsequent appropriators who beneficially used the water prior to its use on the reservation. In short, the court stated that the United States has the power to create a water right appurtenant to the lands of an Indian reservation without complying with any state law. The same rule holds for national recreation areas and other federal establishments.

To illustrate, the Special Master found that the Fort Mojave Indian Reservation in Nevada had the right to beneficial consumptive use of 6,267 acre feet when needed, and with the priority as of the date of 1890. As of now, no land is irrigated on the Reservation, but at any time in the future, land can be irrigated, even if it takes water away from other users with a later priority.

In my discussion of the Federal-State water right relations, I mentioned the Pelton Dam decision. The Supreme Court in this case went right down the line in this decision stating that at the time of a reservation, and on that particular date, enough water was reserved for the full use of the reserved lands at such a time when they felt like using it.

There seems to be no question that this decision is likely to strengthen the federal bid for a paramount position in water right policy. The Special Master’s recommendation and the court’s ruling appear to be consistent with the theory that the federal government possesses plenary and overriding control to use for its own purposes the waters of the Colorado and other streams, providing it is on the public domain. This development posed a disturbing question as to water rights involved in many western streams.

I have mentioned that Arizona and California had been bitter enemies over the many years. Over the course of my period in the State Engineer’s office, I had had occasion to meet most of the prominent parties in this controversy. In both California and Arizona, it was greatly a matter of personalities.

While Arizona got everything she asked for in this case and California was cut back, California did have an ace in the hole. Before Arizona could make use of this water, they would have to construct the Central Arizona Project, which had a price tag of over one billion dollars. While Arizona only had one member on the Interior and Insular Affairs Committee of the House, California had quite a few, and California was able to block any authorization by Congress for the big Central Arizona Project.

However, some of the old participants in this controversy passed away, and about a year ago, after over fifty years of bitter litigation, California and Arizona decided to work together, because both of them realized that the next big fight would be with the Upper Basin states.

During the period that the Mexican Water Treaty was under discussion, Arizona sided with the Upper Basin states, and many people have said that Senator Connally of Texas was able to give away 1.5 million acre feet of the

Colorado River water on the Rio Grande. Arizona naturally expected the Upper Basin states to support her in the development of the Central Arizona Project. Apparently, the Upper Basin states having compacted among themselves, thought that they did not need Arizona any longer. So now Arizona and California are working very closely together. In fact, they have a joint office in Washington to promote the affairs of the two states in connection with the Colorado River.

I presume that during the period from 1953 through to 1963 much more than half of my time was taken up with this Colorado River case. While it kept me from doing some of the work I was being paid for by the states nevertheless it was extremely important to the state that Nevada obtain as much water as possible. I feel that with the net consumptive use of 300,000 acre feet from the Colorado River proper, and the full use of the waters of the Virgin River and its tributaries, Nevada will be able to get along quite well until the year 2000. Also it enabled me to become intimately acquainted with some of the lawyers in the Colorado River Basin states.

I was able to get three complete sets of transcripts and exhibits of the case. I gave two complete sets to the State Law Library in Carson City, and the Colorado River Commission in Las Vegas has the other set.

THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

During 1956, I was busily engaged in matters concerning the Arizona-California litigation and at the same time was attempting to carry out my responsibilities as State Engineer. The work in the State Engineer's office had been increasing rapidly. With the ground water development problems in Las Vegas Valley and in other areas of the state, I found that I was not able to do a very good job, and had to turn most of the responsibility to my assistant, who at that time was Edmund Muth.

In the fall of 1956, I informed Governor Russell that I couldn't very well do a good job as State Engineer and a good job as consultant to the Colorado River Commission on the Arizona-California litigation at the same time. I suggested that either I be relieved of the responsibilities of the litigation, or I would be required to take a leave of absence from the office of State Engineer and work solely on the litigation matters. Another alternative that I suggested to the Governor was that he create a new position of interstate Stream Commissioner,

giving this commissioner the responsibility on Interstate water matters.

However, when the legislature took the matter up early in 1957, they decided to set up a new department which would be known as the Department of Conservation and Natural Resources. Under this department, there were to be four divisions: the Division of Water Resources, which would be headed by the State Engineer; the Division of Forestry, headed by the State Forester; the Division of Oil and Gas, headed by the Chairman of the Oil and Gas Conservation Commission; and the Division of State Land, to be headed by the State Land Register. The Director of the Department had the responsibility of appointing the State Engineer and the State Forester. It was provided that the Director should also be ex-officio State Land Register.

The act which set up the new department provided that the Director would have the responsibility of formulating the policies of the department and of the various divisions, the coordinating of the activities of the various divisions, and from time to time

adopt, amend and rescind such rules as he deemed necessary. The Director was to plan such studies and investigations as he deemed appropriate, and to carry out such studies in coordination with the various divisions. Finally he was to coordinate all studies in the state concerned with the supply, development and conservation of water.

The Act further provided that the Director upon request, and when the facilities of his department would permit, should assist the governor and other state departments or agencies in connection with technical matters concerning interstate waters. It was under this provision that the Director was given the responsibility of continuing with the Arizona-California litigation over the waters of the Colorado River. Shortly after I was appointed Director by Governor Russell, I was told by the legislators and the Governor that for the next year or so I was to give full attention to the Colorado River litigation.

The legislature left the door open for the department to develop programs local and statewide aimed toward the development and conservation of our natural resources. Actually, under the provisions of the Act the Director was not given any definite responsibilities, but was given the responsibility of charting his own course. I could, of course, have sat back and merely attempted to coordinate the activities of the divisions, but I felt that the department should proceed in the field of developing cooperative relationships in research programs, and to take on some of work that had heretofore been the responsibility of the State Engineer.

Among the obligations I assumed was the work in connection with flood control projects by the Corps of Engineers under the 1944 Flood Control Act. Mine was to be the department responsible for studying all reclamation projects by the Bureau of

Reclamation, to work on the watershed protection and flood prevention projects by the Soil Conservation Service under Public Law 566, to carry out the state's obligation in connection with the Small Reclamation Projects Act of 1956, and to represent the Governor on a number of committees.

Other avenues of activity developed in the next few months. There were certain research projects for the Agricultural Research Service and Nevada Agricultural Experiment Station, with which we cooperated. We worked with the soil conservation districts on the coordinated land use projects. The office cooperated with the State Tax Commissioner in connection with the development of a system of determining equitable basis for rural tax appraisal. We were to carry on the work of the Governor's topographic committee, which I had established when I was State Engineer. We also cooperated with other federal and state agencies in their normal operation in the field of water and soil conservation.

I took over the cooperative work with the U. S. Geological Survey on the ground water studies and surface water studies, which in itself took a great load off of the office of State Engineer.

At the time of appointment, I got George Hardman, who at that time was State Director of the Soil Conservation Service, to come over and be my assistant. George had spent a great number of years in government service and could get retirement; in fact, within a year or two he would have had to retire from the federal government because of age. However, George proved a very valuable man to have, because of his vast knowledge of the land and water problems of the state of Nevada. George Hardman is still with the department and will retire on July 1, 1967. I also brought over to the department my very

faithful secretary, Alta Thiex, and here again I was very fortunate.

The Act creating the Department provided that the Director may, in his discretion, establish such other divisions as may be deemed necessary. Also, he was given a wide latitude in developing his programs. It was under this phase that, as soon as the Colorado River litigation required less of my attention, we developed a number of research projects in cooperation with the Desert Research Institute.

At that time, about 1962, Dr. George Maxey was with the Desert Research Institute and I was able to get the legislature to appropriate some money to my department for basic ground water research. It is from this source of money that much of Dr. Maxey's activities were carried on during the next three or four years.

Shortly after I was reappointed Director in 1959, and realizing that more cooperation and coordination was needed between federal and state agencies, I suggested to Governor Sawyer that he initiate the organization of the Governor's Natural Resources Council, for the purpose of better coordinating the activities of the several federal and state agencies operating in the field of natural resources. Governor Sawyer asked me to perfect the organization and act as chairman. On this Council there were in addition to myself, Frank Groves, Director of the Fish and Game Commission; Jack Lehman, Director of the Department of Economic Development; Otis Wright, State Highway engineer; James Adams, then the Dean of the Max C. Fleischmann College of Agriculture; Jeff Springmeyer, the Legislative Counsel; Walley White of the Division of Public Health Engineering; Ed Muth, whom I had appointed as State Engineer; George Zappatini, the State Forester; William J. Hart, Director of the

Nevada State Park Commission; Dr. Vernon Scheid of the Mackay School of Mines; George Bissell, who was then manager of the State Planning Board; Charles Cleary, State Soil Conservationist; Ernie Palmer, head of the Bureau of Land Management; Ivan Sack, Supervisor Toiyabe National Forest; Burton A. Ladd, Superintendent of the Carson Indian Agency; and George Wiseman of the Stillwater National Wildlife Refuge. A few months later we appointed Mr. A. J. Shaver to represent us on the Colorado River Commission as a member.

The first meeting of the group was held on November 24, 1959. A constitution and by-laws were prepared and approved in March of 1960. Under the provisions of the by-laws, the Council was to meet quarterly. Its main purposes were to coordinate all related resource activities, to serve as a source of information, to provide a mechanism to facilitate the exchange of information, to coordinate technical and research aspects of resource programs, and to provide a forum for the discussion and clarification of matters of mutual concern.

This Council proved very productive. It met quarterly, had good programs, good discussions. Excellent minutes of these meetings were prepared by my secretary, Mrs. Thiex. Since my leaving the Department, the Council had been continuing its activities. However, recently they brought about a reorganization plan that eliminated the State Engineer and the State Forester, leaving it up to the Director of the department to represent these groups. Also some of the other were eliminated and some new agencies added, including the Desert Research Institute.

SOCIAL, CIVIC AND POLITICAL AFFAIRS

SOCIAL LIFE IN CARSON CITY

We moved over to Carson City from Sparks on the last day of June, 1935, and on the first Monday of July, I reported to work as Deputy State Engineer. We were able to find a house to rent right away. This was an old house built in the late 1860's by Mr. H. M. Yerington, who was of considerable fame as far as the early history of Nevada was concerned. He was one of the builders of the Virginia and Truckee railroad. The house was big and rambling. One part of it was occupied by Harley Harmon, who at that time was chairman of the Public Service Commission.

At this time, there were no new homes in Carson City. I learned that the newest building in Carson was at least ten years old, so you had to rent one of the older houses if you expected to live in Carson City. The houses were heated by coal stove, but we felt quite fortunate in getting this place to live when we first arrived there. George Russell, the uncle of Charlie Russell, owned the

building and was the landlord, so we used to see quite a bit of him.

Carson City was really beautiful small town at that time with a population of about 3,000 people. The population of Ormsby County in general was probably not over 5,000, and this included the Stewart Indian Agency. All the streets in Carson City were lined by big trees, even Carson Street, the main street through Carson City. The Main Street and Robinson Street, west of Carson Street and leading up to the Governor's mansion, were the only paved streets in town at that time. All of the other streets in town were dirt. There were not too many sidewalks, lots of trees and it was very beautiful.

Our daughter Ann was born the twelfth of October—we were living in Carson City—and the date is well impressed on my mind, because we had twelve inches of snow on October twelfth. Ann was actually born in Compton, California, because Ethel went down to stay with her sister and brother-in-law, Dr. and Mrs. Ferguson, for the arrival of the baby.

After living in the old Yerington house for about a year, we moved to another old house owned by August (Dutch) Berning, who was one of the key people in the Highway Department. Dutch was given the position of division engineer of the Highway Department in Las Vegas, so while he was 'gone, for a year or so, we lived in his house. Upon his return we moved across the street to the old Berning house which was built in about 1864. This was a stone house with many rooms. In each room was a coal stove.

In 1938, we decided to build a home for ourselves, and we chose a lot on King Street. In that year we moved into our new home. At that time it was the most westerly house in Carson City. In the later part of January 1938, our son Allan was born in this house. In those days, there was no hospital in Carson City, and most of the births were in the homes rather than in the hospital.

One of the interesting things of the area was the old V & T railroad which was in operation. It was quite an event for the townspeople to be at the station when the V & T came through. It, too, had to cease activities because it couldn't compete with the trucking industry, but I have always felt that if they could have held on a few more years, possibly the road could have been preserved for historical purposes, at least to some extent.

One of the old landmarks in Carson City was the brewery. This was located in the big brick building on King Street which has been occupied by the Carson for the past several years. The brewery was the favorite spot for the state workers to congregate following the cessation of daily activities. As I had to pass by it every night as I walked up to my home on King Street, it was very convenient for me to stop in. The brewery put out beer under the name Tahoe Beer, but it couldn't compete with the more modern breweries, and had to

give the production of beer sometime during the '40's.

I should mention that in Carson City during the late '30's and '40's there was considerable social activity, much more than at the present time. My wife and I were members of the bridge club which included Alan and Lucille Bible, Raby and Margaret Newton, Dr. and Shiela Sullivan, Dr. Dick and Lucille Petty, and George and Gertrude Gottschalk. This was called the Husbands and Wives Bridge Club and it flourished all during the 1940's to the mid 1950's.

Shortly after arriving in Carson City, I joined Capitol Post #4 of the American Legion and a few years later, was Post Commander. I followed this by being District Commander. After cessation of World War II, quite a number of the old timers dropped out of Legion activity making way for the younger people. As far as Carson was concerned, the American Legion Post never flourished much following World War II.

When I was living in the old Berning house, I vividly remember one Saturday being visited by the Reverend John Harvey, the Presbyterian minister, which was our denomination. John said that they were trying to develop a Rotary Club in Carson City which was being sponsored by the Minden club. He wondered whether I would be interested in becoming a charter member. I replied in the affirmative, and in about April of 1938, the club was organized.

Hans Jepsen of the Minden club was a main member of that club in getting the new club started. Hans was County Clerk of Douglas County, for many years and for a number of later years, Clerk of the Federal District Court, state of Nevada. Other charter members of the Carson Rotary Club were Bernard Hartung, who at that time was with the Highway Department and is married to

one of the Winters girls; Denver Dickerson, who is presently the Secretary of Guam; Tom Wilson, who at that time was running a dairy in Carson City and had also married one of the Winters girls, and is now head of one of the leading advertising agencies of the state located in Reno; Les Edwards, who presently is superintendent of the Las Vegas hospital; Lawrence Little, who was with the Highway Department then and now retired; William (Billy) Holcomb, who at that time was Deputy Highway State Engineer, who later became Highway Engineer and is presently head of the planning department for the city of Reno; Joel Snyder, who was with the Sprouse-Reitz Company; Raby Newton of the Highway Department; Ed Krenzer of the Highway Department; and John Savage, who was in construction business for himself. Savage is now retired and building a new home near my home in Washoe Valley. There were altogether, a total of fifteen charter members, and the only three charter members left in the club are William T. Holcomb, Lawrence Little, and myself. In 1939, Alan Bible joined the club.

The Rotary Club maintained a membership of about forty for a great number of years, and now has built up to over eighty. It has had a very strong influence in the life of Carson City. The first President was John Harvey and I believe Alan Bible was the second President. Sometime about 1945 or 1946, I was President of the Rotary Club. State Civilian Defense

On April 25, 1941, Governor Carville, acting under provision of the 1919 statute, established a State Council of Defense and appointed the personnel consisting of twentyfive men and women, which was the maximum amount allowed by the statute. The appointments were made so that all parts of the state were covered. On May 8, 1941, Governor Carville called the appointees

in, of which I was one, and the council was organized.

For some reason or the other, perhaps because I was the youngest person there, I was elected to be the State Director. H. E. Hazard, who at that time was with the state and now is in Las Vegas, was elected Secretary. The executive committee consisted of Rosella Lewis of Reno; George Twaddle of Reno, who was then the fire chief; Walter Devereux, who was very active in veteran's affairs in Reno; Tom J. Salter, who at that time was an attorney in Winnemucca; Gordon B. Harris, who was one of the top officials of the First National bank at that time and is still connected with the bank; Alfred Lewis of Fallon, and George Henningsen of Gardnerville. Another member of the State Defense Council was I. R. Crandall of Las Vegas, who was one of the most active persons in the state in civilian defense. He received some remuneration from the county, and established an office in the basement of the Federal Building in Las Vegas. Other members were James Farndale of Las Vegas who became county chairman, and Nellie Carroll of Las Vegas. Around the state and other places, were William C. Moell of Elko, Amos Dow of Goldfield, Joe Rabaleati of Eureka, Bert Acree of Austin. Bert was one of the famous figures in Lander County; for many years he was county clerk and now retired, but still living. In Caliente, Willard Smith represented the Defense Council. Others were Lee Littell of Yerington, James Johnson of Ely, A. R. Nelson of Candelaria, Leo Deckleman of Tonopah, Paul Gardner of Lovelock (who at that time was the editor of the Lovelock Review, and now retired and living in Carson City), Ray Peek of Virginia City, Harriet S. Gelder of Reno, and Joe Haller, an attorney still practicing here in Reno.

At that time I was Deputy State Engineer and Mr. Alfred M. Smith, the State Engineer,

agreed that I should carry on the work of the State Defense Council as much as I could, and at the same time carry on my duties as Deputy State Engineer. For some months after the creation of the Defense Council there were no funds available to defray the expenses of the Director. Therefore, during this period all the clerical help I had was from the State Engineer's office. My traveling expenses were paid by the State Engineer to some extent although I paid a great deal of them myself. As Deputy State Engineer I had to travel quite a bit around the state in those days in connection with the stock watering rights, so as much as possible I carried on my duties as Deputy State Engineer, although I am afraid that I could have done much more in the job I was being paid for had it not been for the work in the Defense Council.

The Defense Council was organized several months prior to the beginning of the war. However, it seemed that war was imminent and therefore I attempted to organize all the counties as well as all the communities in the state. Insofar as this was all volunteer work, it meant that I had to set the example to have anybody really get to work on it. So I spent a great deal of time traveling around the state and writing letters.

As one medium of communication, I started preparing a newsletter every so often, sending these newsletters out to all the defense councils, both county and community throughout the state. I think during the entire period that the Defense Council was active, which carried to several months following the cessation of the war, I wrote over seventy of these bulletins. This was always an activity that I carried on at home, but it seems to have been a great help.

Now the civilian defense had two main functions: one, civilian protection and second, civilian participation. In civilian protection,

the desire was for the protection of civilian life and property and to teach the people of Nevada how to save their lives and property from enemy attack from the air. To this end there had been enlisted by May of 1942, over 8,000 volunteer men and women to act as air raid wardens, auxiliary firemen and policemen, emergency medical service, emergency utility repair, public work corps and other protective services all essential to civilian defense.

At that time.—about a year after the Council was organized—we had sixty county and community councils which were very active. I recall we had defense councils not only in the county seats of the counties but in every town in the county, including such places as Nixon, Verdi, Beowawe and so forth. Each county had a County Civilian Defense Director who coordinated the activities in the counties. Then each city had a civilian defense director who coordinated the work within the city. The other phase of participation included such things as salvage drives, "victory gardens" and so forth.

On May 20, 1941, President Roosevelt created by executive order the Office of Civilian Defense. This office had a three-fold purpose: first, to assist in the organization of civilian agencies of defense; second, the coordination of the efforts of the city, state, and federal governments; and third, the direction of all activities so that there might be complete and total mobilization.

In Nevada we were in the Ninth Region of Civilian Defense, together with Montana, Idaho, Utah, Arizona, California, Oregon, and Washington. The regional office was in San Francisco and we had many visits from the various colonels who were in charge and also several meetings were held with the other states. I thought at that time that Nevada had one of the best Civilian Defense organizations in the country.

Practically everything of the emergency nature that the government wanted first was given to the State Council of Defense to get done. For instance, in January of 1942, the President decided that as an emergency measure, tire rationing boards should be organized under the Council of Defense. Within one week after the notice came to me, each town in the state had set up a rationing board. Later on, this board and personnel was taken over by a State Rationing Administrator appointed by the President.

We set up state consumer interest committees, state health and welfare committees. Recreational committees were also set up to plan recreational schedules for soldiers and defense workers. In many of the communities, volunteer offices had been established with a person in charge which centralized all the participation activities. Here volunteers would fill out their registration cards and be interviewed and then were assigned to the programs which they were best qualified for. In Washoe County, Clara Beatty managed the community office in the basement of the old City Hall. In Las Vegas as I have mentioned before, I. R. Crandall handled it. No other county had any full time person in charge of the local Defense Council.

Realizing the danger of range and forest fires the Council of Defense, in cooperation with the Forest Service and Grazing Service, Indian Service, Extension Service, county fire coordinator, state Highway Department, and others, we organized rural fire boards in order that all fire fighting equipment and personnel could be coordinated. At this time we were being scared somewhat by the Japanese firesetting balloons. We were of the opinion that the Japanese felt that one of the best ways to attack this country would be by setting forest fires, so we organized to take care of this. Actually, only a few of these Japanese

balloons fell in Nevada, one down around Yerington as I recall, and one up in Washoe County. We were called over to Salt Lake City by the Army to see one of these captured balloons and to be given instructions as to what to do and how to handle them.

Another of the great fears that we had was that if there were an enemy attack on the Pacific coast, there was the possibility of a sudden and uncontrolled evacuation of people from the coastal areas eastward through Nevada and into Utah. This would not only represent a major traffic problem but problems of sanitation, health, welfare, emergency housing, feeding and clothing. With this in mind, we appointed an evacuation coordinator under the State Council of Defense. As I recall, this was Robert Allen, who at that time was State Highway Engineer. Through the efforts of Mr. Allen every watering place along any of the highways leading from California was documented as to the amount of water available. Also documented were all of the fuel supplies, emergency housing, food supplies and so forth. Several times during the few years we were working on the defense activities, we took inventories of the stores throughout the state. We found very few stores that had more than a week or ten days of supply of staple food articles. Strangely enough, out in Eureka and Austin they had food supplies that would have carried them for at least two months, but with an influx of people through the state they would be up against it as far as feeding them.

In connection with the protection services, we sent a number of people from Nevada to a school that was being held at Stanford on protective services. When these people came back they in turn instructed the local people by holding schools throughout the area. In this way, over 3,000 volunteers were given information in all phases of the protection services.

A great deal of the work that went on through Nevada can be credited to the chairmen of the County Defense Councils. I might mention these people, because they really did a fine job. James Farndale of Clark County, who was also on the State Defense Council; Ira L. Kent, Churchill County (Ira ran a large merchandise store in Fallon); George A. Montrose, an attorney from Douglas County; Harry Sigmann, who was with the First National Bank in Elko; Amos Dow of Esmeralda County, who was also on the State Defense Council; and J. B. Rebaleati of Eureka County. In Winnemucca, J. W. Schaeffer, and in Lander County, sheriff James F. Moore were chairmen of the County Defense Councils. In Lyon County, a druggist from Yerington, Mr. T. C. Murphy, and in Mineral County, Farrell L. Seevers, who served in the State Senate shortly following that and presently is serving as State Senator from Mineral County, were on the County Council. J. C. Perkins of Nye County served there. Mr. Perkins ran the gold dredging outfit at Round Mountain. In Ormsby County, John Ross, an attorney who later became a federal judge, now deceased, was the County Chairman. In Lovelock, Paul Gardner, a member of the Defense Council was County Chairman. In Storey County was Ray E. Peek, and in Washoe County, C. H. Knox, who was the head of the Pioneer Title and Insurance Company. In White Pine County, perhaps the most active County Defense Council Chairman in the state was A. E. Briggs, who was with the Forest Service. In Reno, Mayor August Frohlich was head of the Community Council, and in Sparks, A. C. Mulcahy, who was editor of the Sparks Tribune.

We were often pestered by officers of the U. S. Army assigned to the Office of Civilian Defense. It always became my duty to take them around the state and have them meet

with the Defense Councils. I recall one day we came into Austin just about noon. At that time there was no mining activity in Austin and it was almost a ghost city. You would probably see a dog or two lying out in the Street; otherwise, there would have been no need to slow down. Sheriff Moore was the County Defense Council. When we stopped to see the sheriff, he said, "Let's go have lunch." We went over in the Chinese restaurant. I remember the sheriff always carried his six-shooter sticking in the side pocket of his pants.

During the course of the meal, the sheriff leaned back and made this statement which I will never forget: "You know, after the hustle and bustle of city life, when evening times comes, I get in my car and I go to the top of the mountain and pull off the road and just look out over the Reese River Valley and commune with myself." His reference to the "hustle and bustle of city life" was rather amusing, inasmuch as about the only hustle and bustle was the dogs having to get up when somebody passed through town:

I remember another occasion that we were visited by one of the nation's most prominent orators, a man by the name of Dr. Kirkpatrick. He was the personal representative of the President of the Union Pacific Railroad whose name, I think, was Jeffers. I spent almost a week taking him around the state while he gave talks in Minden, Carson, Las Vegas, Boulder City, Elko, and two or three other places. He was a very fine person and able orator and I think he enjoyed his trip to Nevada.

Dr. Kirkpatrick was a noted photographer. All the pictures that you would see on the Union Pacific calendar, including the White Dome in Zion National Park were taken by Dr. Kirkpatrick. Several months after he left Nevada, I received a beautiful picture in a very beautiful frame of Hoover Dam, with

the water shooting out of the penstocks. This was a picture that he had taken. It was a large picture, and I think the most beautiful picture that I have ever seen framed. I still have it and I am very proud of it.

In about January of 1942 (this was only a month after the war started), we set up a state advisory board, so that I could have better coordination with the state agencies. Members of this board were Robert A. Allen, the State Highway Engineer; Alfred Merritt Smith, the State Engineer and my boss; Adjutant General Jay White; Dale Ely, who at that time was the state Red Cross representative; Colonel Thomas Miller, Improvement Supervisor in CCC grazing service; Alexander McQueen, Forest Supervisor in the Toiyabe; Attorney General Gray Mashburn; and Ed Settlemeyer, State Chairman, USDA War Board.

Much of my success during the Civilian Defense Council years was due to the help I received from Bob Allen, State Highway Engineer. Anytime I needed help in personnel, somebody to go around the state with me, or in fact anything, Bob never refused. The same could apply to Alfred Merritt Smith in giving me wide latitude to carry on the defense work.

It is hard to recount everything that was done during those years. I kept a very accurate record of my time, and following the beginning of the war on December 7, 1941, for the next two and one half years, my records show that I was only home twenty-one days free from any work. I was going all the time. Naturally, I had a gas ration card that allowed me to use all the gas I needed, so almost once a month I made a complete trip around the state. When I happened to be home on the weekend, I would write up my defense newsletters. Shortly after the war started, I was able to get a secretary and she occupied a part of my office in the State Engineer's office. One of her jobs was not only typing up the

defense newsletters, but I had to continually keep writing to the chairmen of the County Defense Councils and the community Defense Councils to get things done.

I think by the time the war was over, we had over 15,000 people actually registered, assigned to certain jobs and for the most part, doing them very excellently. We kept up the salvage operations on tin cans and newspapers all during the war. One of the first jobs we had as far as salvage operations were concerned was the salvage of aluminum. I have records of the amount of aluminum that was obtained. We did a very fine job.

Another thing we worked up was a short wave communications system. Emerson Wilson, an attorney of Reno and now head of a title insurance company, was the chairman. He got together all of the "ham operators" in the state and had a very fine communications system set up. I am sure that if at any time the telephone operations had gone out, we would have been able to communicate around the state.

By the time the war was over, my health was somewhat broken down. I couldn't sleep, and I had to take sleeping pills, but fortunately I regained my health after a few months. In the spring of 1942, I was appointed Assistant State Engineer which gave me more obligations as far as the State Engineer's office was concerned and still I kept up my schedule on defense activities.

To cite many names of people who did a great job would take a long time and considerable research. I was certainly indebted to Bob Allen, to Alfred Merritt Smith, to Raby Newton and Bernard Hartung, both in state offices then. Raby Newton was the State Coordinator for the protective services and Bernard Hartung carried out many of the activities in the community service such as salvage programs, signs and so forth.

After the war, the Defense Council kept working on a number of projects, but gradually the interest died down. I think it was in 1946, that I called a halt to our operations. Certainly during the period of emergency, the volunteers were available and really worked. But I learned that if there were no emergencies, it was very difficult to keep the interest up.

During that period, I believe that I had met almost everyone in the state. As I have mentioned we had a number of meetings; we had citations given to us in Ely, Boulder City and Las Vegas and Reno.

If anyone ever wants to record some detail of the activities of the Nevada people at home during those war years, my Defense Newsletters and the complete clippings from all the newspapers in the state would be a wonderful reservoir of information.

I have very little knowledge of the operation of the State Defense Council during the First World War. I know that in 1918, Governor Emmet Boyle appointed a defense council by executive order; at that time there was no legal status for such a defense council. I believe the operation of the Defense Council was mainly tied in with aliens and things of that nature. In 1919 the State Legislature legalized the Defense Council by legislative act. It was under that act that Governor E. P. Carville appointed new defense council in 1941.

During the second World War, the matter of control of aliens, primarily Japanese, was never a problem. There were camps set up several places in California, one down around Bishop, but the Defense Council was never given any authority to get into that problem. I don't think we had the alien problem here in Nevada that they had had in other states. This is due to the lack of Japanese people here in Nevada. I presume that those that were here

were trans ported out of the state to camps in California and Idaho. There was no German problem at that time.

COUNTY COMMISSIONER

In 1944, as the war neared its end and civilian defense activities decreased somewhat, some of my friends came to me and said that for four years I had been telling them what to do and made them work. Now they wanted me to do something for them. They wanted me to run for County Commissioner of Ormsby County. I felt that I couldn't refuse this request, because actually everyone had been doing everything I asked of them for so long. So I filed for the office, on the Democratic ticket. The Republican holdover was a very fine gentlemen by the name of Anderson. He was a farmer, with a ranch located near the entrance of King's Canyon.

The night of the election most of the townspeople gathered down by the Daily Appeal office but I stayed home, no doubt reading a detective story. Later that night someone phoned and said that I had won by ten votes. So early in January I became a County Commissioner. I had as associates on the board, John Savage, who was a holdover, and Jim Foster, who was elected a member of the board at the same time as I was. Jim was a butcher, a next-door neighbor, and a very fine chap. John Savage was in the construction business, and he too was a very fine fellow. Savage ran the Savage Construction Company until a couple of years ago when he sold out and retired. Within the past few months he has built a very fine home right across the valley from my place at the southern end of Washoe Valley. He purchased thirty acres from Frank List, and is going to raise Tennessee Walking horses as a hobby. Jim

Foster still owns a meat market at the Market Spot in Carson City.

After the first few meetings it became evident that a great deal of work had to be done in the county, not only in bringing assessed values up to date but in connection with the poor farm and other county matters. At that time the County Assessor was a chap by the name of Alec McCharles. Alec looked a great deal like Abraham Lincoln. In fact, in all of the Admission Day parades in the first few years after they started about 1938, Alec always paraded and portrayed Abraham Lincoln.

Alec's idea of assessing property was based just on how well he liked the party whose property he was assessing. It was the most mixed-up state of affairs I ever saw. Dealing with corner lots owned by some chap that Alec liked would probably result in an assessed value of maybe \$1,000 or probably \$500, while an interior lot might have a value of \$2,000. So the first thing the commissioners did was to start equalizing property valuations.

We had no formula to go on except at least to make the corner lots more valuable than the interior lots. We set the town up by sections. That is, we divided it by King Street running east and west, and Carson Street going north and south. Strangely enough, we didn't have too much opposition. I wrote up a little circular on what we had done, and when the tax bills went out I sent a copy of this with every bill. I don't believe we had a protest in the whole town. We did have some semblance of equity in the valuations. In later years, the tax commission set up definite formulas and helped the counties reevaluate, so much of this was changed. However, in any event, we raised the valuation considerable.

Then the poor farm out at the junction of Highway 50 and 395 south, was in deplorable condition. I remember the first time I went

out. I went in some of the bunkhouses and saw that the bedposts were set in tin cans. I asked why this was done, and one of the old boys said, "To keep the bedbugs from climbing up." It seemed that they not only climbed up the beds, but they came down from the ceiling.

So we did considerable work out there. We drilled a well, because before that they were taking water directly out of Clear Creek and Clear Creek was used for irrigation and stock-watering up above, so the water was not too good. We painted the houses, and made it in fairly good condition.

One of the first things I did in order to know more about county management was to make up the county budget. I got started making the county budget, and did that every year while I was in office and for several years after that as a favor for the county. This way, I was able to get a clearer picture of county operations and be in a better position to discuss it in Commissioners meetings. The county budget had not only the county budget itself but the school budget. Of course, it had to tie in with the city budget so we wouldn't get over the five dollar limit. Strangely enough, at the budget hearings we never had any opposition during my period of making up the budget. Oftentimes people would kick, but when it came time for a hearing, no one showed up.

About a year after I first became a County Commissioner, an attorney from Lakeview, Oregon, came down and discussed with us the proposition of setting up a state association of county commissioners and becoming a member of the Interstate Association of County Commissioners. Forest Cooper was quite a livewire and he brought with him the secretary of the Interstate Association of County Commissioners, a man by the name of Judge Phipps.

We agreed to call a meeting of the county officials which we held in the old State

Building in Reno. Governor Carville came over and gave a talk, and Cooper was there as well as Judge Phipps. It was agreed that we should set up a state association and to do it at that time. I was appointed temporary chairman. I appointed a constitution and by-laws committee which took a couple of hours off and wrote a constitution and by-laws. Then we had an election, and I was elected the first President of the State Association.

In order to operate a state association, and also to be members of the Interstate Association, we had to raise some money. We worked up a formula by which each county would budget so much money as its share. As I recall we put a flat rate on every county and then an additional amount depending on the population. In that way Clark County and Washoe County ended up by paying about half of the total amount.

As the State Association became very active, we had State Association meetings and executive meetings. Prior to the legislature, we had legislative meetings. We sponsored certain legislation and got it through the legislature. I can't remember all the legislation we sponsored but one I do remember, and that was setting up the State Health and Welfare Board. The way we had it, the majority of the board would be representatives of the counties designated by the State Association. This was actually passed, but in later years the state officials didn't like it too well, having the counties telling them what to do. So the law was amended so that the representatives of the counties became the minority.

In connection with the activities of the Association and its relation to the legislature, as president I was somewhat in the embarrassing position. I was a state employee— Assistant State Engineer—and anytime one of our bills would need help I would send out word to all the county

commissioners. They would flock into Carson and parade up and down the halls, but I didn't dare go over there. As a state employee, I did not have any business over there and I was afraid somebody would ask me what I was doing, and I would be on county business. In any event, a lot of the commissioners would come in several times during a legislature's session and meet with the people from their county and parade up and down the halls to support their particular piece of legislation. I think most of the legislation was good, and much of it still remains on the statutes. Some were amended, like the Health and Welfare bill, but nevertheless the basic bill was what we had prepared.

Every year the Interstate Association would have a meeting at some place, within the eleven western states. I attended several of them, two during my period of holding office, and on two or three other occasions when I was asked to come in and give a talk to the group. I think the Interstate Association has somewhat faded out, and the support has now been given to the National Association of County Officials, which is a nationwide organization.

I had a two-year term. When I filed for a second two-year term, I had no opposition. At the end of the second term, I was forced to quit because the work was involving too much daytime requirements, and while my chief, Alfred Merritt Smith, the State Engineer, never objected, I felt somewhat embarrassed when I would leave for a whole day to attend to county business.

I long realized that I would make a poor politician. I remember when I first ran for county commissioner I had some big placards made up. I would get up at four o'clock in the morning and put them around on fence posts and telephone posts, because I didn't want anybody to see me doing it. I was somewhat

embarrassed. The second time I didn't have any opposition so I didn't have to put the cards out. I remember I had two or three hundred of them made up and I put about fifty out, and the balance of them remained in the attic of our home on King Street until we moved.

SUMMARY AND CONCLUSION

Starting about in 1953, I had a number of years in which I had health troubles. Whether it was due to overwork or what, I don't know. I went to Mayo's three different times, and spent considerable time in the two hospitals in Reno and the one in Carson City. I think my greatest trouble was that I was living too close to the office because I would usually go down on weekends, get the mail and work in the office rather than take a vacation. I think the last vacation I took was about 1942. I promised myself when I came over to the Desert Research Institute that I would take my Vacations. So far I have failed to do this.

Sometime about the year 1959, I was talking to Ed Miller, a real estate man in Carson City. I asked him if there was any good land for buying. He said, "Well, I have a deal going right now. There is a little triplex down here on Main Street that the people want \$20,000 for. It is only five years old, and it is probably a good buy." The only money I had at that time was my endowment life insurance policy, but I looked the property over and decided to purchase it. I think I got \$8,000 for

my life insurance policy to pay down. I was paying the people who owned the property something like \$200 a month.

I had only had the property a year and a half when the Wilshire Oil Company indicated a desire to get the land for a gas station, but they had no need of the triplex. They said they would pay \$30,000 for the land. So I sold it to them, and then I bought another lot on Burton and Corbett Streets which was just east of the Safeway store. I had a house mover from Fallon move the triplex over there. I had the \$30,000 and it cost me about \$5,000 to move the triplex and put the foundation in.

Then I decided to buy a five-acre tract of land from Frank List in Washoe Valley. Frank List, a few years previously, had purchased the old Lord Wellsley property and he cut up a small portion of it in five-acre tracts. Art Bernard, who sometime before had been Warden at the Penitentiary, had purchased a five-acre tract and had started a home. There was one other home on the five-acre tracts before I purchased mine.

For the money I obtained for the triplex I engaged a carpenter by the name of Bob Gentry to build a home. I was my own contractor and Bob Gentry worked on an hourly basis, so I was able to build quite a large home for about ten dollars a square foot. Bob Gentry was not only a master craftsman but a very honest worker. He did everything but the electricity and the heating system. I was able then to sell my home on King Street to Jack Artz, who was a deputy in the State Division of Forestry. I think Jack paid me \$20,000 for the King Street property so I used that money and my triplex money to build in Washoe Valley.

I had no trouble keeping my triplex occupied but as I was never made to be a landlord, I decided to sell it at the first opportunity. A young fellow by the name of Tom Smales and his wife who were tenants bought it. Tom was a field engineer in the Division of Water Resources, one of the divisions under my department. I asked Tom one day if he would be interested in buying the place. He said that he and his wife had been talking about it, and they would be interested. So I was able to dispose of the property to Tom for \$27,000. A portion of this he paid down and the other portion is being paid out. So I was able to almost clear my property in Washoe Valley.

But the point I am getting at is that with the advent of the property in Washoe Valley, which is beautifully located up on the hillside about three-eighth of a mile west of the main highway, overlooking Washoe Lake, and the fact that I had to do a great deal of outside work seemed to be the turning point as far as my health is concerned.

I hadn't done any real physical work for many years except mow the lawn on the King Street property. Now I was building fences, putting in lawn, building other structures—such as “Fort Washoe,” so called, and my

observatory, that I became so interested I could hardly wait to get home in the evenings to start working. I resented having to be gone on Some weekends on business which kept me away from the place. I like to believe that even as old as I am, the heavy physical work that I have been doing has helped me. Of course, my wife is always worrying about my having a heart attack or something, but so far I have kept in good physical condition.

In fact, the month that we moved into the Washoe Valley home, which was May 1961, I spent the first two weeks of that month at Mayo's. Since that time I have never been near a hospital unless I went to visit someone. So it certainly has been a wonderful thing for both my wife and myself. My wife had been teaching school in Carson City for thirteen years. Shortly after we moved out, she retired from teaching because there was so much to do around the place such as watering trees and so forth. She couldn't do that and teach school at the same time.

In concluding this rather brief discussion of some of my activities and recollections, I would like to say that I feel that I have been through a period in Nevada history that was extremely important. When I went to Las Vegas in 1929, the population of the state was about 90,000 people, and the population of Clark County was probably about 7,000 people, of which perhaps 3,000 lived in Las Vegas itself. I have seen not only Clark County expand, but the whole state. We have now nearly one-half million people in the state, and this number is increasing very rapidly.

I had the fortunate experience of being able to become acquainted, and in many cases quite friendly, with many of the old timers who were the original inhabitants of Las Vegas when it was first settled about 1904. There were J. T. McWilliams and his wife whom I will always be greatly indebted to, the Ferrons,

Doc Martin, Sam Gay and many others. Then when I moved north in about June of 1934, I first went to Lovelock and then to Sparks and about July first of '35 moved in to Carson City when I became Deputy State Engineer.

At that time, there were a great many of the old timers still living that spanned the period from the Comstock up to 1935. I remember seeing many times and becoming acquainted with ex-Governor Colcord who was governor from 1891 to 1894. His daughter, Mrs. Stafford, ran a book and magazine store in Carson City. There was many others including Mr. Schwartz, Sr., who recollected driving Mark Twain around the hills of Virginia City.

With my activities in the State Engineer's office that required almost continual travel to almost all of the out-of-the-way places in the state, I met many of the old stock men and ranchers, and learned a great deal about the history of the state by talking to them. My first meeting with any of the United States Senators was with Key Pittman, who at that time was one of the most powerful figures in the Senate, being chairman of the Senate Foreign Relations Committee. I met Senator Oddie in his later years. I became quite well acquainted with Senator McCarran and I knew Berkeley Bunker, who became Senator in 1940, from my Las Vegas residence. Jim Scrugham, whom I knew quite well and made a number of trips with, first became a member of the House of Representatives and later Senator. I always felt that Senator Scrugham was many years ahead of his time. He would have made a great Secretary of the Interior. Of course, I knew Ted Carville well when he was Governor.

I was always very friendly with George Malone, although he often took me to task for something that he thought I should have done but didn't, especially in reference to the Colorado River litigation. I have always felt

that Senator Malone could have become one of the great Senators of this county, if he had not talked so much and didn't get off on a number of tangents. Some of his ideas about relations with foreign countries I thought were good, and we certainly would have been out of a lot of trouble had we listened more carefully.

Ernest Brown was appointed to succeed McCarran. I knew Brown quite well, as he was an attorney and I had held a number of hearings where he was one of the attorneys for one of the parties.

In the House of Representatives, my first experience, of course, was with Jim Scrugham. He was followed by Maurice Sullivan, whom I knew quite well. Then a little later, came Charlie Russell who later became Governor. Charlie Russell was a very good member of the House but he was defeated by Walter Baring whom I have since had a lot of contact with. While I don't always agree with Walter, I consider him a friend, and I think he would do anything he could on legislation that I recommended. Cliff Young, who defeated Baring and then ran for the Senate and was defeated, was another good Representative in the House from this state. I rather think that if he had remained as a member of the House, he probably could have still been there, because he was well-liked and made a very fine Congressman.

When I first came to the state in 1929, Fred Balzar was Governor but he had passed away prior to my coming to Carson City. Morley Griswold became Governor at that time and I became very well acquainted with him, as he was an attorney on many water cases. I think I have already related the occasion when he was an attorney for a Basque who couldn't speak English and Morley not only asked the questions but he interpreted the Basque's answers for the record.

About the time I moved into Carson City, Richard Kirman became Governor, and I presume I knew him about as well as most of the people around Carson. He was rather a retiring man and had stated that he was only in for four years. Consequently, he didn't leave the Governor's office or the mansion on many trips out over the state to speak at gatherings like some of the later governors used to do.

Ted Carville succeeded Kirman. This was during the Civilian Defense days, and I had a great deal of contact with him. We made a number of trips together to San Francisco and Los Angeles and out over the state to certain meetings. I certainly enjoyed Governor Carville. I thought he made an excellent Governor. He was well liked by almost everyone. He resigned to become Senator when Senator Scrugham passed away, and Vail Pittman became Governor. Vail was another Governor who I was quite close to and whom I was very fond of. He served two terms and was succeeded by Charlie Russell who served until January 1, 1958.

Charlie Russell was another splendid man. I had many dealings with him. He appointed me State Engineer when Mr. A. M. Smith retired, and then in 1957, he appointed me Director of the new Department of Conservation and Natural Resources. The only fault I ever found with Charlie Russell—and this wasn't exactly a fault—was that I felt that he was perhaps too good-natured and too easy on those of us who worked under him in state government. I thought he made an excellent governor, however.

Perhaps the most political governor we have ever had was Governor Sawyer, who succeeded Governor Russell. I think that Grant Sawyer had made one of the best governors that the state has ever had. While I have had a lot of dealings with him, and still am working with him in connection with

the Lake Tahoe park, I found that he was not nearly as easy to become friendly with as the other governors whom I worked under.

In rating the governors who I have served under, I think that I would have to say that Grant Sawyer had been the best because he has served during a period of rapid expansion in the state. While he was the most political-minded, and no doubt is looking forward to greater heights, still he has been an outstanding governor. I think Governor Carville and Governor Russell would probably come next followed by Vail Pittman. Governor Kirman was a banker, and while he did a good job as governor, he made no effort to carry the image of the state to other states but merely carried out his duties in Carson City. I felt he did that well. I think the Democrats felt that he was perhaps the only man that could defeat Morley Griswold who was acting governor. I always felt that Mr. Kirman entered the governor's race somewhat against his own wishes.

As I dictate this biography, Governor Sawyer has announced for a third term, and he will be opposed by Paul Laxalt. I have known Paul Laxalt ever since I went to Carson City and I am sure if he is elected he will also be a good governor. This particular race this fall will be probably quite bitter and the participants are both of high caliber.

In reference to the lieutenant governors that I have known and worked with, Morley Griswold was the first. He was followed by Fred Alward, a Democrat from Las Vegas. Fred came to Las Vegas about the same month and year that I did. He made a pretty good record as an attorney but after serving as lieutenant governor, he faded out of the picture. I think he left the state; at least I haven't heard of him for a long time. Then, of course, Maurice Sullivan and then Vail Pittman followed Alward, and Cliff Jones

of Las Vegas became lieutenant governor in 1947. Cliff has been in the news recently in connection with his activity with Bobby Baker that developed into quite a scandal in Washington, D. C. I felt that Cliff, in his capacity as lieutenant governor and also as a state senator, always acted in the best interest of the state.

Jones was followed by Rex Bell, who was a Republican and who previously had been a rancher and one of the early movie idols. Shortly after I went to Las Vegas in 1929, I went out to the ranch that he later purchased near Searchlight and surveyed all the springs for stock watering purposes. I knew Rex Bell quite well, and was quite fond of him. Had he lived, I am sure that he would one day have been governor. He had actually filed against, and would have run against Governor Sawyer, but he passed away prior to the election.

The first Secretary of State I knew intimately was George Greathouse, a Democrat, originally from Elko. He was a very fine gentleman. I think the Greathouse family had quite a history in Nevada. I knew his predecessor, George Brodigan in later years. Greathouse was followed by Malcom McEachin, and then by John Koontz in 1947. I think John Koontz has perhaps made the best Secretary of state we have ever had. He has served continuously from 1947, and I understand he will file for reelection this fall. I am sure he will win.

As far as the State Treasurer is concerned, Dan Franks, who was elected in 1935 served as State Treasurer up to 1963 when he retired. Prior to that George Russell who was an uncle of Governor Russell served as State Treasurer. I knew George quite well because the first house we lived in in Carson City was the old Yerington house George owned. He was our landlord for the first year of our residence there. I have known him over the years. He is

still living, and every Admission day he will, or used to at least, parade with the Spanish-American War veterans.

Henry Schmidt was the first State Controller that I knew in that office. He was elected in 1935. He was quite a character. Way back as far as about 1910 he filed with the State Engineer applications to appropriate the waters of the Colorado River at Boulder Canyon for irrigation and power purposes. He had a great deal of vision. I presume in the years following the filing of these applications he was laughed at a great deal, but he was a man of vision as was later proved.

Prior to Henry Schmidt, Ed Peterson was the State Controller. After he was defeated in 1934 he opened up a garage in Carson City and I got very well acquainted with him as we kept the state cars there. Ed just passed away within the past few months, and his age was around ninety-two or ninety-three, I think. He had worked on the Virginia and Truckee Railroad for many years prior to becoming State Controller in 1927.

The Attorneys General I knew quite well. I also knew the deputies, because we had so many dealings with them in connection with the water problems. Gray Mashburn, the Attorney General when I went there in 1935, was noted for his long opinions. Every time I would go over to talk to him, he would spend the first hour in telling me how busy he was, and the chances are I wouldn't get out until noon, even if I went there at eight o'clock in the morning. At that time, Howard Gray was his deputy. Howard is now one of the most prominent attorneys in the state, and a good friend of mine. Shortly after that, Alan Bible became the deputy.

After graduating from Law School, Alan became District Attorney of Storey County and then Deputy Attorney General. In 1942, when Mashburn announced his retirement,

Alan ran for office and was elected. At the time Bible was Deputy, W. T. (Bill) Mathews was the Senior Deputy. In that election, Bible ran against Mathews for the job and won, but he retained Bill Mathews as his Senior Deputy. Later on, Mathews was elected to the Attorney General's office when Alan cast his eyes on Washington. Bill Mathews was the Attorney General when we started the Colorado River litigation and he retained Bible as special counsel for the state in connection with the Colorado River litigation. Bible had been defeated in the primaries for U. S. Senate, and for the following three or four years he was in private practice.

When Bill Mathews retired in 1954, Harvey Dickerson became Attorney General. Then Harvey tried for governor and lost, and Roger Foley became Attorney General. I worked very very closely with both Dickerson and Foley during the Colorado River litigation, and they are both good friends of mine. Roger Foley is now a United States District Judge and is doing an excellent job. Harvey Dickerson ran again for Attorney General in 1962, and presently is the Attorney General. I think all of the Attorneys General I have known have been outstanding.

In speaking of the Surveyors General, before I came to Las Vegas I had had considerable work with Tom Lotz who served from 1928 to 1934. He was followed by Ray Staley, who served one term. Staley was a house painter who got on the Democratic bandwagon and was elected. I don't think he did anything outstanding during his term of office. He was followed by Wayne McLeod, a Democrat.

McLeod found that there were thousands of acres of land in the state still owned by the state. He saw to it that many of his friends became acquainted with these areas, and purchased them at \$1.25 an acre and later

sold for several hundred dollars an acre. In fact, Wayne, perhaps through a third party, acquired some of this land and owned land in the Las Vegas Valley on which he later made a great deal of money. Nevertheless, he was one of the most active Surveyors General that I had any experience with. I think as far as running the office was concerned, he did perhaps a better job than any other of the Surveyors General that I knew anything about. He was followed by Louis Ferrari who had been a deputy under McLeod. Louis didn't do anything outstanding, because all of the state land had been sold, practically, and there was nothing left.

There have been rumbles of skullduggery during the reign of McLeod and Ferrari, but I am sure they both operated within the law. The fact that perhaps both of them saw to it that their friends knew where the state lands were located and purchased them, sometimes for the Surveyor General himself, was not outside of the law, although had I been in that position I would not have done it.

When the Department of Conservation and Natural Resources was set up in 1957, the Surveyor General's office was abolished and the Division of State Lands was created within the Department, which was under my supervision. For some years prior to my taking over the state lands, Joyce Madeford had been the Deputy. She was a very quiet lady, very good in her position, and I retained her as Deputy Land Register. The Director of the Department was the ex-officio Land Register.

I recall that Ferrari had run for reelection and was elected. Then when the legislature set up the department and abolished the office, he wouldn't give me the keys to the Surveyor General's office. I filed some kind of an action in the District Court which forced him to turn the office over to me.

All during my years in Carson City I became very well acquainted with the personnel of the State Printing Office. All of our biennial reports, water laws and so forth were printed, and we had a great deal of business there. Joe Farnsworth had served as Superintendent of State Printing from 1911 to 1942 and Joe was quite a character. I think when he retired in 1942 he was in his late seventies. He recalled many of the interesting historical events in that area. He liked to talk about the Fitzsimmons-Corbett fight for the World Heavyweight Championship in Carson City. He could tell experiences by the hour and by the day. It is too bad that someone couldn't have recorded the things he knew, because it would have been a worthwhile history of Nevada. Joe was followed by Jack McCarthy in 1943 and Jack is still the State Printer. Whether he will run again or not, I don't know, but I hope so. I became very well acquainted with, and very fond of him.

The first State Inspector of Mines that I knew well was Matt Murphy, who was elected in 1935. Matt served until 1947 when he passed away and was replaced by Art Bernard. He served from 1947 to 1950. Art Bernard, following Russell's election as governor, became Warden of the penitentiary, a position he held until Governor Sawyer was elected in 1959. I rather think that Art would again like to be Warden of the penitentiary, and if Laxalt is elected as governor, this may come about.

When I went to Carson City in 1935, the members of the Supreme Court were Judge Ducker, Judge Coleman and Judge Sanders. I knew them quite well, but not nearly as well as the ones that followed. In 1936, E. J. L. Taber of Elko was elected to the Supreme Court. He was a man that weighed about 350 pounds, I presume, but in his youth had been quite an athlete. He lived almost next door to

me in Carson City and I became very fond of him. Later on William E. Orr of Lincoln County was elected to the Supreme Court. I had known Judge Orr from Las Vegas and Pioche, and also some of his family. He later became a member of the Federal Appellate Court in San Francisco. He was a fine judge and a good friend. Judge Eather was elected in 1946; he was from Tonopah. I became very well acquainted with him. He was not only a good judge but he looked like a judge, and certainly he served well.

In 1948, Milton Badt became a member of the Supreme Court as did Edgar Eather of Eureka. I knew Milton Badt when he was an attorney in Elko, as he was the attorney for many of the stock people in connection with water rights. He was still serving but was in the hospital and there was a question whether he would run again as I dictated these lines. I hoped not, because he was over eighty years of age and certainly should have had a chance to take things easy.

Charlie Merrill became a member of the Court in 1950, but resigned to become a member of the Federal Appellate Court in San Francisco. Jack Pike—Miles N. Pike—was appointed to fill the vacancy, but he didn't run for election as he felt he would rather carry on as an attorney than to sit on the bench in Carson City.

Over the years I became well acquainted with all or most of the members of the state legislature, and the list of the fine people whom I knew so well is so long that I would hesitate to mention them. I must say that my relations were always good, because I felt that the legislators were of the opinion that I was trying to do a job, and not padding my budgets. It was quite notable that I would get practically everything that I asked for, including travel money, and the other departments would be cut down.

In concluding I want to state that much of my success has been due to the fine people who have been around me and made me look good. Of course I was fortunate to have a fine wife who didn't complain when I traveled so much. There are others whom I feel channeled my life to what it is now.

I have mentioned my daughter Ann and son Allan. After graduating from high school in Carson City, Ann attended a business college in Los Angeles for several months and on one of her visits home met Roy Callahan (everybody calls him Pete) a Marine stationed at Pickel Meadows. Pete had a fine war record in both World War II and in the Korean conflict. They were married in 1953. After receiving his discharge from the Army, Pete got a position with the Anaconda Copper Company at Weed Heights, as a machinist. Their four children were born there in the local hospital. Ray Lee is the oldest, age eleven, Lynn, the only girl is nine, Michael Allan (Mike) is eight and Robert is six years old. About four years ago Pete accepted a position with the Sierra Pacific Power Company in Reno, as a machinist, a position he still has. They make a fine family.

Our son Hugh Allan II after graduating from Carson High School attended Stanford for about a year and a half, then entered the University of Nevada, from which he graduated. Allan wanted to be a lawyer and we encouraged him in this direction. He went to the University of Oregon law school at Eugene and graduated near the head of his class. About two years ago he became associated with Eugene J. Wait, Jr., a very fine lawyer who has his own law office in Reno. I think that before too long, Allan will be taken in as a partner.

In 1963, Allan married Carol Kreger, who had attended the Carson High School. Carol had married and later obtained a divorce. She had a young son, David, now five years old.

Allan and Carol make a fine couple and I am sure will lead a very happy life.

I think that Alfred Merritt Smith, who was for many years State Engineer and my boss, was the reason that my later experiences were channeled through the State Engineer's office and to where I am now. The mere fact that in 1933 I did him a favor in Las Vegas in taking a couple of classes in his mining class brought me to his mind when he wanted a Deputy State Engineer in 1935.

Another man whom I will always be grateful to is Robert Allen, who when I first knew him was State Highway Engineer, briefly State Engineer, and later Chairman of the Public Service Commission. He was a great help to me during the war days. I could always rely on him.

Another man whom I feel indebted to is George Hardman, who when I first knew him was head of the Soil Conservation Service in Nevada. When I became a State Engineer and Director of the Department of Conservation and Natural Resources, I relied a great deal on George for advice on many things concerning our natural resources. When I took over the position as Director of the Department in 1957, I asked George to come with me as my assistant, and he served and is still serving as Assistant Director of the Department. George is now seventy-six, and he would like to go until June 1, 1967, when he can retire.

Another fellow that I feel has been a great help to me over the years is George Maxey. George came to Las Vegas in 1944, with the U. S. Geological Survey. We worked together quite closely during the years that followed. One of the reasons that I was willing to come over to the Desert Research in January, 1965, was that Maxey would be here to work with me and help.

Another man I am fortunate to have for a friend is Alan Bible. I owe him a great deal.

I have often wished that I had kept a diary, but then again I guess I was too busy to take on any such obligations. I have had a wonderful experience in the state; I have a beautiful home and a wonderful family; and from the many years of public service, I don't feel that I have any enemies. I do have many friends, and have been very fortunate to have them. I continue to feel wealthy in my present associations at the Desert Research Institute at the University of Nevada.

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